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MONTANA BUSINESS QUARTERLY

WINTER 1975

MONTANA BUSINESS QUARTERLY

WINTER 1975 VOLUME 13 NUMBER 1

The subscription rates for the Quarterly are $4.00 per year, $7.00 for two years, and $1.00 per single issue.

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MONTANA BUSINESS QUARTERLY
BUREAU OF BUSINESS AND ECONOMIC RESEARCH
UNIVERSITY OF MONTANA
MISSOULA, MT 59801

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In This Issue

ECONOMIC REPORT to the GOVERNOR

December 1974

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This year marked a new first in Montana state government: an economic report to the governor. The report was prepared at the request of the Governor's office, by the Bureau of Business and Economic Research, University of Montana, and the Department of Agricultural Economics and Economics, Montana State University, in cooperation with the Department of Intergovernmental Relations and the Employment Security Division, Department of Labor and Industry. Financial assistance was provided by the Old West Regional Commission, but the report does not necessarily reflect the views of the Commission.

The complete text of the report is presented on the following pages.

Winter 1975

CONTENTS

I. AS 1975 BEGINS

In common with the rest of the United States, Montana begins 1975 facing serious economic problems. The extent of these problems is not clear; many of the developments of recent weeks have not yet found their way into the measures of economic activity available as of this writing (mid-December 1974). Figures for the year—annual averages and totals—will obscure the recent declines. Thus our analysis may not be as precise or as accurate as we would like. (In later pages we discuss more fully the difficulties of current economic analysis.)

One thing is clear: most of the economic problems which the state faces have been created by external forces over which Montanans have little or no control. Worldwide inflation has created high costs of living for Montana residents. Declining national and international markets for some Montana products are resulting in unemployment in a number of Montana's export industries and in falling incomes for many Montana citizens. Wood products, copper, tourism, and cattle either have been or are likely to be adversely affected. Two other Montana products still in good demand—wheat and coal—provide bright spots in what is otherwise a rather bleak picture.

The decline in the housing market has brought hard times to the wood products industry, always a cyclical activity. Employment in a number of western Montana communities has been severely affected; more layoffs may be in store for industry workers.

Butte's underground copper mines, traditionally high cost operations, are being closed, with a presumably permanent loss of 500 to 600 jobs. Falling demand for copper in housing and automobiles may cause a further curtailment of output.

The new dimension in Montana's mining industry, fraught with problems as well as with promise of some new employment, is coal. About 600 new jobs have been added in coal mining since 1970. Further modest increases are anticipated in the next few years.

The possibility of reduced fuel supplies and/or increased prices, combined with the national recession, may well bring a reduction in tourist travel in 1975. The last few years have seen heavy investments and corresponding increases in employment in facilities serving tourists, especially in motels and restaurants. Fewer tourists may mean a loss of some of the new jobs in these businesses, as well as problems for the investors. Certainly the expansion of travel-oriented activities may be at least temporarily curtailed.

Agriculture, still generally a fairly reliable barometer of the state's economic activity, is pulling in two directions. Wheat farming areas are prosperous as wheat prices remain high. Cattle country is depressed; cattle prices are very low and not likely to improve significantly in the near future. Most of the increase in personal income in Montana since 1972 has been due to dramatic rises in farm prices and thus in farm income. A decline in total farm income at a time when nonagricultural industries are in some difficulty would have an unfortunate effect on Montana's economic fortunes.

Because Montana incomes—at least in current dollars—have risen rather rapidly in recent years, state government currently finds itself in good fiscal condition. Governments often benefit from the early stages of inflation, as tax collections increase and some expenditures remain stable. This is a temporary phenomenon; wages and salaries paid to public employees eventually must be increased and the costs of goods and other services purchased by government also rise. We suggest that this point has been reached by Montana state government and that future increases in revenue, unless the tax structure is radically altered, may be relatively small.

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It is difficult to interpret and appreciate Montana's present economic situation without putting it into historical perspective. In the next few pages, we attempt to do this.

II. A HISTORICAL PERSPECTIVE: MONTANA'S ECONOMY, 1950 TO 1970

Montana was unusually prosperous in the years immediately following World War II, thanks largely to the favorable conditions in agriculture. The situation changed, however, beginning about 1950, when Montana's economy turned lackluster. From 1950 to 1970, the state experienced periods of above-average prosperity, but they were due mostly to unusually good years in agriculture or to other isolated events. In general, Montana's economic position relative to the rest of the nation deteriorated significantly. These events and the reasons behind them have been examined in detail in the Montana Economic Study. We will only summarize the major conclusions, and update some of the data to 1970, so that Montana's current economic situation may be put into proper historical perspective.

We begin by examining population trends because, underneath it all, an economy consists of people. Table 1 reports the population of Montana and the United States during 1950, 1960, and 1970. These figures show that during the fifties Montana's population increased significantly, but at a rate below that of the United States: the number of Montanans grew from 591,000 to 675,000, or 14.2 percent, while the nation's population rose from 151.3 million to 179.3 million, about 18.5 percent. Between 1960 and 1970 the disparity between Montana and the United States reached dramatic dimensions. By 1970, the number of Montanans had inched upward to 694,000, a 2.8 percent gain from 1960, while the nation's population grew to 203.2 million, up 13.3 percent during the decade.

The growth of the nation's population was due primarily to an excess of births over deaths, but Montana's slow population growth cannot be attributed to either of these factors. In fact, Montana's birth rate was slightly above the national average and its death rate was about the same as elsewhere in the nation. Rather, the slow growth rate of population was primarily due to net migration, a factor which played only a minor role for the nation. Table 1 shows that during the fifties about 25,000 more persons left the state than moved in. Between 1960 and 1970 this figure rose to 58,000, representing over 8 percent of the 1960 population.

Montanans are fond of discussing the advantages of living in Montana and the desires of many people to move to the state. Yet, figures in Table 1 demonstrate that, at least between 1950 and 1970, those leaving the state far outnumbered those entering it. People move for many reasons; however, we believe that the single most important factor explaining the excessive outmigration between 1950 and 1970 was the slow growth of Montana's economy.

A state economy's health may be measured in a number of ways. We have chosen to look at trends

Table 1

Resident Population of Montana and the United States 1950-70

	Resident Population			Percent Change		Net Migration	
	1950	1960	1970	1950-60	1960-70	1950-60	1960-70
Montana	591,000	675,000	694,000	14.2	2.8	-25,000	-58,000
United States	151,326,000	179,323,000	203,185,000	18.5	13.3	2,642,000	3,020,000

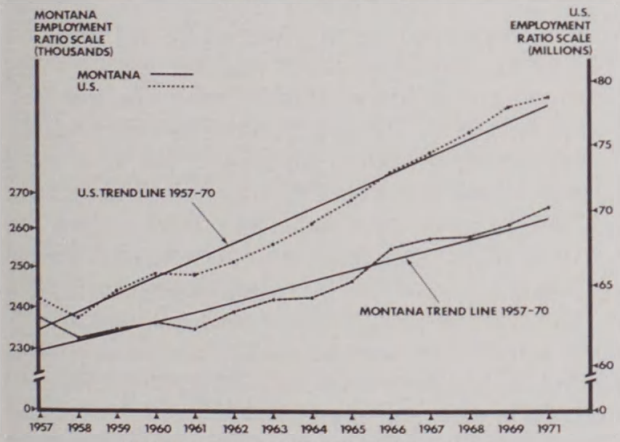
Sources: U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 304 (table 4) and No. 460 (table 3). Percentages derived.

in employment, unemployment, and per capita income. Each represents a different facet of the economy and may be subject to varying interpretations; taken together, they accurately portray Montana's economic performance between 1950 and 1970.

Figures 1 and 2 present the trends in employment and unemployment for Montana and the United States between 1957 and 1970 (1957 is the earliest year for which reliable Montana data are available). Looking first at figure 1, we see that employment in Montana grew at a much slower rate than did employment in the nation as a whole. Abstracting

FIGURE 1

TOTAL EMPLOYMENT, MONTANA AND THE UNITED STATES, 1957–1970



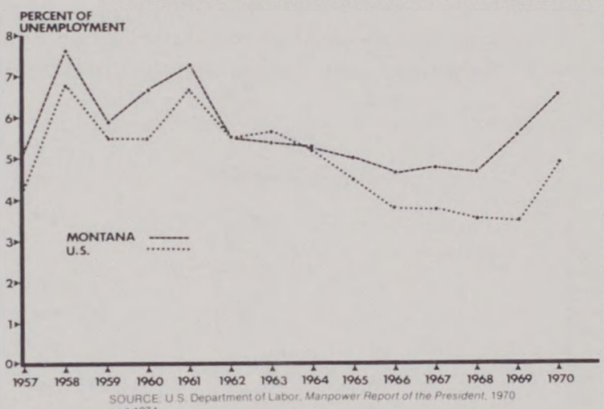
SOURCE: Montana Department of Labor and Industry, Employment Security Division, and U.S. Department of Labor, *1974 Manpower Report of the President*.

from the minor peaks and troughs, we find that Montana's employment grew by about 12 percent between 1957 and 1970, as compared to almost 23 percent in the United States. The unemployment data shown in figure 2 tell much the same story. Montana's unemployment rate generally follows the same up and down pattern as that for the United States; but, with several exceptions, it averaged about one full percentage point above the national figure. Thus, these data clearly suggest that Montana's economy was not creating jobs as fast as the national economy, and that many of the migrants from the state left in search of jobs.

Employment figures provide a good overall perspective of growth in an economy, but they do

FIGURE 2

UNEMPLOYMENT RATES, MONTANA AND THE UNITED STATES, 1957–1970



SOURCE: U.S. Department of Labor, *Manpower Report of the President*, 1970 and 1974.

not measure the economic well-being of the residents—that is, how "well-off" they are. There is no truly accurate measure of well-being. The most widely used indicator is per capita personal income, aggregate money income divided by population. The major shortcoming of this index is that it equates well-being with money income and certainly Montanans enjoy considerable benefits which are not easily measured in terms of dollars. Per capita personal income, nevertheless, is the one measure which is readily available and easily understood.

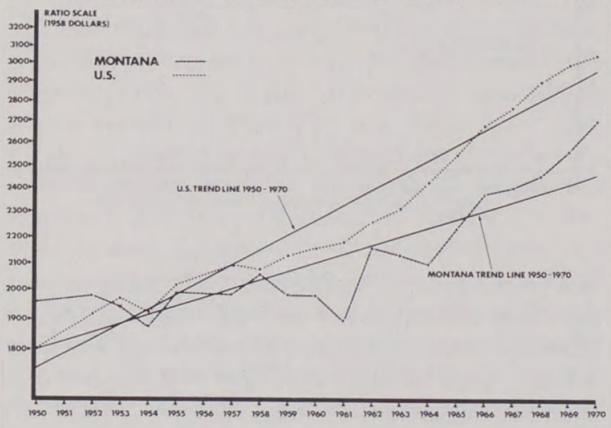
The trends in per capita personal income, converted to 1958 dollars to eliminate the effect of inflation, for Montana and the United States are shown in figure 3. During 1950, per capita income in Montana was $1,957; by 1970 it had risen to $2,710. This is a significant increase and indicates that the average Montanan was certainly better off in 1970 than in 1950. During the same period, however, per capita income in the United States rose from $1,805 to $3,067. In other words, in 1950 the income of the average Montanan was over 8 percent greater than the average for the nation. But by 1970 this figure had dropped to more than 12 percent below the nationwide average. Although the year-to-year data show numerous peaks and troughs, the overall trend is unmistakable: per capita income in Montana grew at a much slower rate than in the United States. This suggests that while Montanans were improving their economic

position, they were not sharing in the national prosperity to the same degree as were their counterparts elsewhere in the country.

The peaks and troughs in Montana's per capita income shown in figure 3 reveal an important point

FIGURE 3

PER CAPITA PERSONAL INCOME
MONTANA AND THE UNITED STATES, 1950-1970



SOURCE: U.S. Department of Commerce, *Survey of Current Business*, August 1973

(and provide a preview of our conclusions concerning current conditions): in almost every case, the major swings may be correlated to developments in agriculture. The prosperous agricultural years of 1950, 1951, 1958, 1962, and 1966 all correspond with large upturns in per capita income in Montana. Analogously, 1954, 1959, and 1961 were years of poor harvests on Montana's farms and ranches and statewide per capita income plunged. It is obvious, too, that the ups and downs of farm income have made total per capita income far more erratic in Montana than in the country as a whole.

The data for employment, unemployment, and per capita income do not tell us all we want to know. They demonstrate that Montana's economy grew slowly between 1950 and 1970 but they do not explain why it grew slowly. A thorough discussion would require more time and space than we can spare and we refer the interested reader to the Montana Economic Study.

A brief overview of Montana's economy can be obtained by conceptually dividing it into primary and derivative industries. Primary industries are those which depend heavily on markets outside the state or are otherwise influenced by factors originating beyond Montana's borders. The major examples are agriculture, mining, manufacturing, railroads, and the federal government. Derivative industries, on the other hand, primarily serve the local population and include such businesses as wholesale and retail trade, the services, and state and local governments. Economists believe that most economic growth occurring in relatively small areas, such as states, can be attributed to events outside the region under study and that changes in the derivative industries can be traced to changes in primary industries.

Table 2 presents Montana employment in primary and derivative industries during 1950, 1960, and 1970. It takes only a quick glance at these figures to determine why Montana's economy has been so lackluster: there has been little or no growth in jobs in the primary industries. Between 1950 and 1970, primary employment declined by over 18,000 workers. This decrease was more pronounced between 1950 and 1960, when almost 17,000 primary jobs were lost, than during the sixties, when a much more moderate decrease of 1,500 jobs occurred. The major factor causing the declines in primary employment was agriculture; the number of workers on Montana's farms and ranches dropped from almost 53,000 in 1950, to 39,000 in 1960 and then to 36,000 in 1970. For the most part, this resulted from the consolidation of farm and ranch units and reflects long-run agricultural trends occurring in Montana and throughout the nation. Agriculture, however, is not the whole story; there were also significant declines in the number of workers in mining and railroads—totalling 11,000 over the twenty-year period.

On the bright side, there were increases in wood products and in federal government employment; between 1950 and 1970, the former grew by almost 3,000 workers and the latter by 3,600 workers. But the growth of these industries, plus the addition of about 3,000 jobs in other industries, was not sufficient to counterbalance the declines in agriculture, mining, and railroads.

The relationships between primary and derivative industries are subtle and complex. In

Table 2

Civilian Employment in Montana, 1950-70

Industry	Civilian Employment (Thousands)			Change in Employment (Thousands)		Distribution of Employment (Percent)		
	1950	1960	1970	1950-60	1960-70	1950	1960[1]	1970
Primary industries	103.3	86.6[1]	85.1	-16.7[1]	-1.5[1]	100.0	100.0	100.0
Agriculture	52.8	39.2	36.1	-13.6	-3.1	51.1	45.3	42.4
Mining	10.2	7.9[1]	6.6	- 2.3[1]	-1.3[1]	9.9	9.1[1]	7.8
Metal mining	7.8	5.0[1]	4.0	- 2.8[1]	-1.0[1]	7.6	5.8[1]	4.7
Coal mining, oil and gas extraction, and non-metallic mining	2.4	2.9	2.6	0.5	-0.3	2.3	3.3	3.1
Manufacturing	18.0	20.6[1]	23.9	2.6[1]	3.3[1]	17.4	23.8[1]	28.1
Food and kindred products	4.2	4.3	4.3	0.1	0.0	4.1	5.0	5.1
Lumber and wood products	5.4	7.3	8.2	1.9	0.9	5.2	8.4	9.6
Primary metals refining	4.0	4.0[1]	4.7	0.0[1]	0.7[1]	3.9	4.6[1]	5.5
Other manufacturing	4.4	5.0	6.7	0.6	1.7	4.3	5.8	7.9
Railroads	14.0	9.0	6.6	- 5.0	-2.4	13.6	10.4	7.8
Federal government	8.3	9.9	11.9	1.6	2.0	8.0	11.4	14.0
Derivative industries	125.2	150.3	180.6	25.1	30.3	100.0	100.0	100.0
Nonrail transportation, communications, and utilities	7.9	10.0	10.8	2.1	0.8	6.3	6.7	6.0
Contract construction	10.5	11.0	11.0	0.5	0.0	8.4	7.3	6.1
Wholesale and retail trade	36.7	40.5	48.1	3.8	7.6	29.3	26.9	26.6
Services and finance	23.4	30.0	41.8	6.6	11.8	18.7	20.0	23.1
State and local government	20.0	28.6	40.7	8.6	12.1	16.0	19.0	22.5
All other employment	26.7	30.2	28.2	3.5	-2.0	21.3	20.1	15.6
Total employment	228.5	236.9[1]	265.7	8.4[1]	28.8[1]			

Sources: University of Montana, Bureau of Business and Economic Research, *Research Report of the Montana Economic Study*, pt. 1, vol. 2, chap. 2, table 2.4; and Montana Department of Labor and Industry, Employment Security Division, *Montana Employment and Labor Force*, table C (revised March 1974). Percentages derived.

Notes: The data have not been adjusted for residence and multiple job holders. Percentage detail may not add to totals because of rounding.

[1]Adjusted to eliminate effects of strike.

some cases, a direct connection between primary and derivative jobs may be established and employment multipliers may be estimated. But, over a period as long as a decade, many other changes take place which also affect employment relationships. Growing affluence, for instance, creates an increased demand for both private and public services; employment figures in those industries reflect this increase. Thus, the expansion in derivative employment shown in table 2 does not conflict with the decreases in primary employment. Notice, however, that the growth in derivative employment in the fifties was smaller than in the sixties. This correlates with the overall trend in primary employment, which declined more during the former than the latter period.

The overriding impression of the evidence presented so far has been Montana's dismal economic growth. While this is undoubtedly true, it does not mean that Montana's economy was stagnant or that no changes took place. Among the primary industries, the major event was the relative decline in agriculture (table 2). During 1950, farms and ranches accounted for 51 percent of total primary employment. By 1970, this figure had dropped to 42 percent. Despite this precipitous decline, agriculture remains the largest single employer among Montana's primary industries.

Similarly, the aforementioned declines in mining and railroads, and the growth in wood products, the federal government, and several other industries, are reflected by their changing proportions of total primary employment. In general, we conclude that Montana in 1970 was much less dependent on agriculture than in 1950; but farms and ranches continue to make up the major share of this state's economic base.

There were also major alterations in the composition of Montana's derivative industries. In 1950, wholesale and retail trade was the single largest category and accounted for 29 percent of total derivative employment. Over the next twenty years, employment in the services and in state and local government grew at a greater than average rate and almost equaled trade's relative share by 1970. Thus, in 1950 we could describe the representative derivative worker as most likely to be in wholesale or retail trade. But, twenty years later, he could just as well be a medical technician, a public school teacher, or a policeman.

The increasing concentration of employment in relatively low-paying industries—especially trade and services and state and local government—goes a long way toward explaining the failure of per capita incomes in Montana to keep up with national income growth.

In summary, we have seen that Montana's population grew at a rate far below the national average between 1950 and 1970 due, primarily, to net outmigration. We believe the major determinant of this net flow of people from the state was that an insufficient number of new jobs was created. Also, the average level of economic well-being, as measured by per capita income, failed to keep pace with the increases experienced elsewhere in the nation. This slow economic growth may, in turn, be traced to the poor performance of Montana's primary industries. This does not imply that Montana's economy was static and unchanging. The traditional bulwarks of agriculture, mining, and railroads lost some of their preeminence to wood products, the federal government, and several other industries. In addition, the service industries and state and local government increased their employment substantially.

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This, briefly, is a description of major economic trends in Montana in the fifties and sixties. Since 1970, there have been some signs, and a good deal of discussion to the effect that things are changing in Montana: the market for Montana's agricultural products appears rosy, Montana is becoming more urbanized, and more and more people from out of state appear to be coming here to live.

Further perspective on our present economic condition can be gained by looking more closely at the events of the past five years.

III. 1970-1974: A TIME OF CONTRADICTIONS?

There are many pitfalls involved in attempting to analyze recent economic events. Above all, there is the paucity of up-to-date and accurate numbers. Economic data are notoriously behind the times. We are just now receiving some of the information for 1972, and it will be two more years until certain 1974 figures are available. While we do have some relatively recent data measuring certain aspects of the economy (such as employment and personal income), the more detailed background information, which enables the analyst to correctly interpret the broad aggregates, is simply not yet available.

Current economic analysis is fraught with dangers because the period is often too short to put things in perspective. The ups and downs and little squiggles shown in figures 1 to 3 begin to make sense only when viewed over a long period. It is very difficult to discern the underlying trends or changes in conditions by looking at data for only three or four years. Also, certain events can focus attention on tendencies which may have existed for a long time but were simply not noticed. The energy crisis, which had been building for many years, did not come to the forefront until the oil embargo.

All in all, we feel very humble about our attempts to assess economic events in Montana since 1970. Our analysis is phrased in speculative terms and includes many qualifiers because we simply do not have sufficient data to make definite conclusions. We would not be surprised if, rereading this material several years from now, our explanations appear naive and turn out to be far from accurate.

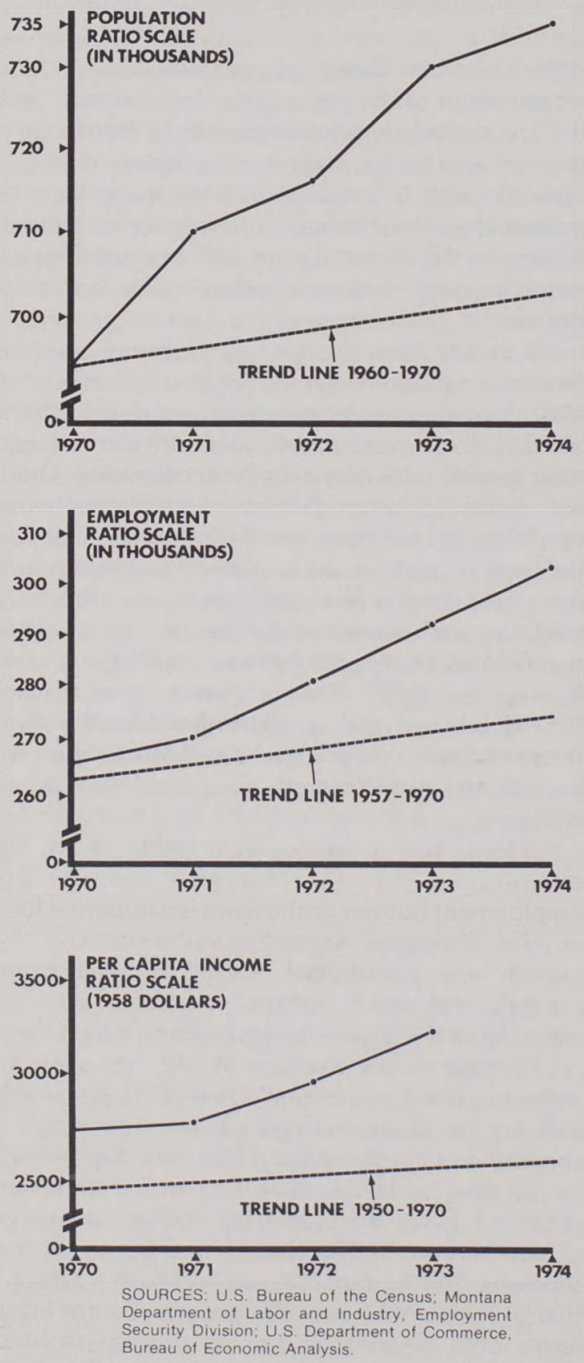
Figure 4 presents the data for population, employment and per capita income in Montana since 1970. According to preliminary estimates, Montana's population was 735,000 on July 1, 1974, up from about 694,000 in 1970. These population figures should be taken with a grain of salt because they are only estimates and are not as reliable as the actual counts provided by the census. (We will have more to say about population later.) Total employment and per capita income (in 1958 dollars) had moderate increases from 1970 to 1971. Beginning in 1972, estimates of both turned sharply upward, with inferred growth rates significantly greater than their historical trends. In both cases, however, the latest figures still are preliminary estimates and future revisions may be quite different.

All in all, these figures seem to indicate that Montana's economy has not performed badly since 1970; population, employment, and per capita income all are exceeding their historical trends and their growth rates may even be accelerating. There are, however, other factors which dampen our optimism. As we mentioned earlier, the data are incomplete and we are unable to put things into perspective. Nevertheless, there is contradictory evidence and we would be hesitant to conclude that the Montana economy has turned a corner and broken the trend of slow growth. The reasons behind our reservations are outlined briefly here; many of them will be expanded further when we later look at individual sectors of Montana's economy.

Looking first at employment (table 3), we are encouraged by the increase in primary employment but our enthusiasm is dampened for a number of reasons. According to the estimates, the growth was distributed among all the major primary industries except railroads. We are skeptical of the figures for agriculture, which show an increase of 400 workers. While they seem to indicate a break in the long downward trend in this industry, we know that agricultural employment is very difficult to estimate and that these figures may be the most unreliable of all the numbers reported in table 3. Given the estimating methods, a change of 400 out of 36,000 should not be taken too seriously. The best that we can say is that it appears that between 1970 and 1974 people did not leave farms and ranches as fast as during previous

FIGURE 4

MONTANA'S POPULATION, EMPLOYMENT AND INCOME SINCE 1970



SOURCES: U.S. Bureau of the Census; Montana Department of Labor and Industry, Employment Security Division; U.S. Department of Commerce, Bureau of Economic Analysis.

Table 3

Civilian Employment in Montana, 1970 and 1974
(In Thousands)

Industry	1970	1974[1]	Change 1970-74
Primary industries	85.1	87.6	2.5
Agriculture	36.1	36.5	0.4
Mining	6.6	7.4	0.8
Metal mining	4.0	4.2	0.2
Coal mining, oil and gas extraction and non-metallic mining	2.6	3.2	0.6
Manufacturing	23.9	24.5	0.6
Food and kindred products	4.3	4.0	-0.3
Lumber and wood products	8.2	9.4	1.2
Primary metal refining	4.7	3.4	-1.3
Other manufacturing	6.7	7.7	1.0
Railroads	6.6	6.4	-0.2
Federal government	11.9	12.8	0.9
Derivative employment	180.6	214.9	34.3
Nonrail transportation, communications, utilities	10.8	13.1	2.3
Contract construction	11.0	13.0	2.0
Wholesale and retail trade	48.1	59.3	11.2
Services and finance	41.8	54.0	12.2
State and local government	40.7	44.5	3.8
All other employment	28.2	31.0	2.8
Total employment	265.7	302.5	36.8

Source: Montana Department of Labor and Industry, Employment Security Division, *Montana Employment and Labor Force* and unpublished data.

Note: These data have not been adjusted for residence and multiple job holders.

[1]Average for the first ten months of the year.

periods. It should be kept in mind that the departure of some may have been only temporarily postponed due to the current prosperity in agriculture.

The largest number of new jobs (1,200) was provided by the wood products industry. But 1970 is not a good year for comparison purposes; it was not a good year for the forest industries. If the 1974 figure is compared to employment in 1968 and 1969, the increase amounts to only 500 jobs. And, unfortunately, in recent weeks all of the growth, however computed, has been temporarily wiped

out by the effects of the decline in the housing market.

Primary metals refining, another of Montana's major manufacturing activities, is estimated to have employed some 1,300 fewer workers in 1974 than in 1970. Much of this loss occurred in Great Falls, with the closure of the Anaconda plant there.

Most of the growth in mining employment (about 600 workers) occurred in the eastern Montana coal fields. Unfortunately, much of this gain may be cancelled by the loss of some 500 to 600 jobs in Butte's underground mines during the next few months. There will be further modest increases in coal mining employment over the next few years.

We will analyze the reported increase of 34,000 in derivative employment in greater detail later in the report, but, for now, we will simply outline some of the evidence which we believe suggests that this growth may be overstated or misunderstood and/or temporary. In the first place, a disproportionate share of the increase in derivative jobs may be directly or indirectly associated with the recent prosperity in agriculture. Whether or not this prosperity—already limited to crop producers—will continue is open to question.

We suspect also that the large increase in employment does not necessarily mean a large growth in population. We think that many of the new jobs in derivative industries have gone to Montanans—to young people or working wives. That is, the growth in employment in these industries probably reflects an expanded pool of Montanans willing to work rather than an influx of workers from out of state. The "natural increase" in the labor force—the excess of young people entering the prime working ages over those retiring—has greatly enlarged the state's potential work force. Also, there has been a revolution in the working habits of women. More and more females have entered the labor force and many have taken jobs in the trades and services, the industries which have shown the greatest growth in employment. Many of these jobs may be seasonal, part-time, or low paying. The actual increase might be more moderate if employment were converted to full-time equivalent (FTE) positions.

We have made some very rough projections incorporating the "natural increase" in the labor force and the rise in female labor participation. These projections, which are based on preliminary and incomplete data, suggest that the recent increase in employment was just about sufficient to provide jobs for the persons living in Montana during 1970. Obviously, there has been a flow of people in and out of Montana. Although we cannot estimate the numbers going in either direction, our projections suggest that there need not have been an excessive influx of out-of-staters to fill the new positions available in Montana.

We should note that Montana is fortunate in being able to provide these jobs for its residents. Insofar as many of them have gone to second earners in a family, they have increased family and per capita incomes. Our concern is that some workers may have been forced to settle for part-time, seasonal jobs when they preferred and were qualified for—and needed—full-time, higher-paying employment.

We do not want to be misinterpreted. We are not saying that the 1970-74 increases in employment are illusory. Nor do we believe the healthy increases in derivative employment contradict the slow growth in the primary industries. (The relationship between primary and derivative industries is not that precise; both the fifties and sixties saw rising derivative employment accompanying declines in primary industries.) Rather, we simply view the apparent increases in total employment with a degree of skepticism and prefer to wait for further data before making any conclusions. Aside from the coal mining industry, conditions in the primary industries, representing Montana's economic base, do not appear to have changed from the sixties, and the remarkable growth in derivative industries may have been accentuated by some unusual conditions.

As we mentioned earlier, the population data shown in figure 4 are simply estimates and are not as reliable as the actual count of persons provided by the *Census of Population* . These estimates are prepared by the Census Bureau which uses a standardized methodology for all states. The procedures may work well for more populous states, but we have reservations about their application to Montana. For example, the annual

intercensal population estimates for Montana during the sixties display characteristics which appear contrary to trends in other economic data. Thus, it is our feeling that these figures probably overestimate the increases in population since 1970.

Finally, the sharp upward trend in per capita personal income corresponds closely with the recent prosperity in agriculture, and one is likely (in fact, almost certain) to be led astray if he attaches much significance to those increases. It is true that Montana experienced some relative income gains, compared to the United States average, during the early 1970s. Not only have these gains been modest, but they may not be permanent. Most of the recent Montana income gain has been a result of the general increase in agricultural prices. According to U.S. Department of Commerce figures, between 1972 and 1973 Montana farm income increased by $202 million or 44.4 percent (about 37 percent in real terms), while nonfarm income increased by $192 million or 10.4 percent (about 5 percent in real terms). As we point out in Part IV, the recent gains in farm income are largely a result of cyclical forces, and probably will not be sustained.

Income figures for all of 1974 are not yet available. Preliminary estimates for a part of the year indicate that real personal income is declining—a trend which appears to have begun in the third quarter of 1973 (table 4). Total personal income in Montana in 1974 will be high, but in real terms it may be lower than in 1973. (The same thing, of course, has been happening at the national level.) The very rapid increases which the state experienced in 1972 and 1973 may not be repeated in the foreseeable future.

Table 4

Total Real Personal Income in Montana
Last Half of 1973 and First
Three Quarters of 1974
(In Millions of 1958 Dollars)

Year and Quarter		Total Personal Income
1973:	III	2,373
	IV	2,345
1974:	I	2,275
	II	2,128
	III	2,047

Sources: U.S. Department of Commerce, Bureau of Economic Analysis; and third quarter of 1974 estimated from data in *Business Week* (December 7, 1974).

Note: The original personal income data were adjusted at annual rates for seasonal fluctuations, and these figures were converted to "real" (constant or 1958) dollars by use of the implicit price deflator for gross national product (GNP) personal consumption expenditures.

IV. A CLOSER LOOK AT SOME SIGNIFICANT DEVELOPMENTS

Because developments during the past few years have been somewhat contradictory and because our analysis of the current situation thus far has been rather brief and general, we present the following section, which deals with certain crucial industries and events which we think are of particular importance to Montana at this time. The choice of industries is fairly obvious: agriculture, wood products, mining, and the derivative industries. We conclude with a brief discussion of the implications of inflation and of our assessment of the state's economic outlook on state revenues and expenditures.

Agriculture: Exerting a Strong Influence on the Economy

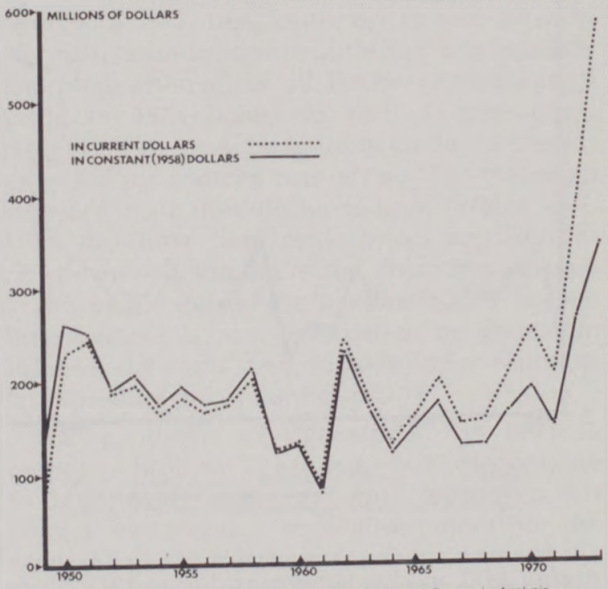
The most significant feature of the Montana economy in recent years has been the unprecedented agricultural prosperity in 1972 and 1973 (see figures 5 and 6). Total net farm income in 1972 was 94 percent above the post-World War II average; in 1973, it was 188 percent above the postwar average. On a per farm basis, the comparison is even more dramatic. In 1972, net income per farm exceeded the postwar average by 126 percent and in 1973 by 242 percent.

Even after adjustment for changes in price levels, the gains in farm income were large. In 1972, total net farm income for the state in real terms was 47 percent above the postwar average; in 1973, it was almost double the postwar average. So, all in all, 1972 and 1973 were extremely prosperous years for most Montana farmers and ranchers, and for many of the businesses serving them.

Agriculture is largely responsible for the modest increase in Montana's overall economic fortunes. In both 1972 and 1973, the state's per capita income increased more than that for the nation as a whole. Montana's increase was 10.4 percent for 1972 and 14.7 percent for 1973, compared to 8.4 percent and 10.8 percent respectively for the United States as a

FIGURE 5

TOTAL NET FARM INCOME, MONTANA, 1949 - 1973



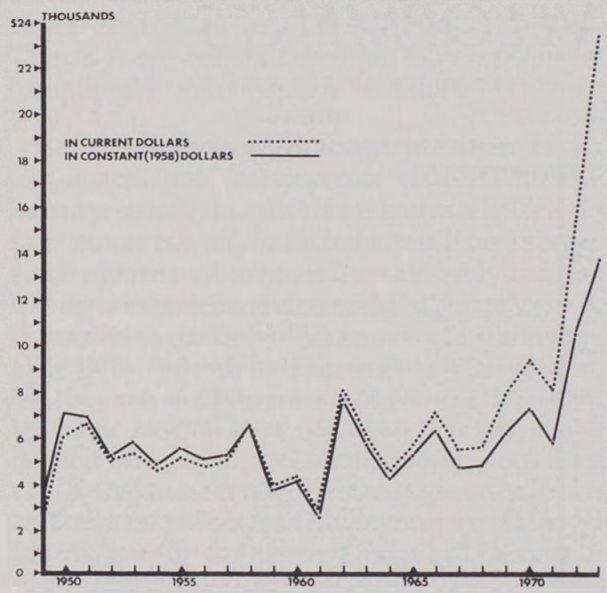
SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis. Prices adjusted by U.S. Department of Agriculture, Index of Prices Paid by Farmers for all Commodities and Services, Interest, Taxes, and Wage Rates.

whole. But Montana's improvement was due largely to changes in farm income. Of the total dollar increase of $749 million in personal income between 1971 and 1973, $387 million or 52 percent went to persons engaged in agriculture. Farm income increased by over two-thirds (68.5 percent) between 1971 and 1972, compared to 10.3 percent for the nonfarm figure; between 1972 and 1973 the comparable increases were 44.4 and 10.4 percent respectively. All of these figures come from the Bureau of Economic Analysis, U.S. Department of Commerce.

The reason for the recent improvement in Montana's agricultural fortunes lies mainly in the dramatic increase in farm product prices during 1972 and 1973 (figures 7 and 8). Farm product prices began to rise rapidly in 1972 and the rise accelerated during 1973. Montana farm product prices in the aggregate rose by about one-third

FIGURE 6

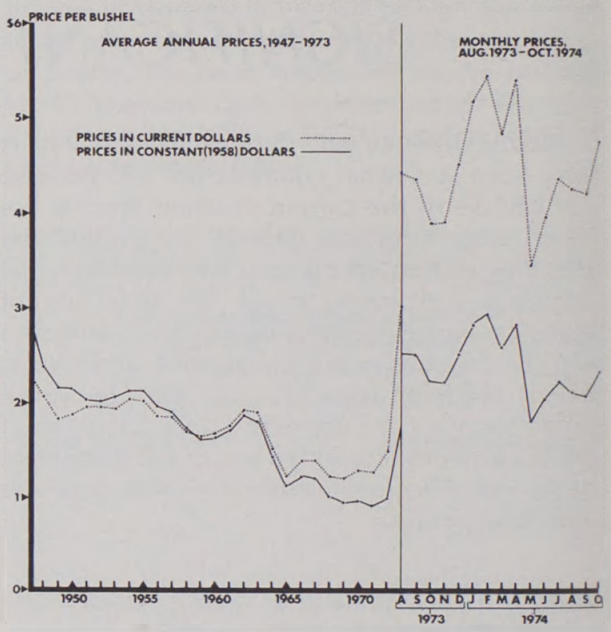
NET INCOME PER FARM, MONTANA, 1949-1973



SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis. Prices adjusted by U.S. Department of Agriculture, Index of Prices Paid by Farmers for all Commodities and Services, Interest, Taxes, and Wage Rates.

FIGURE 7

WHEAT PRICES RECEIVED BY MONTANA FARMERS, 1947-1974



SOURCE: Montana Crop and Livestock Reporting Service. Prices adjusted by U.S. Department of Agriculture, Index of Prices Paid by Farmers for all Commodities and Services, Interest, Taxes, and Wage Rates.

during 1972 and by 44 percent during 1973. Since grain (largely wheat) and cattle and calves constitute about 85 percent of Montana's farm income, most of the rise in overall farm product prices was due to the dramatic rise in wheat and beef cattle prices. Average Montana wheat prices rose from $1.40 per bushel in August 1972 to $4.42 a year later and to $5.45 in early 1974. Montana beef cattle increased from $34.50 per hundredweight in August 1972 to $55.30 in August 1973.

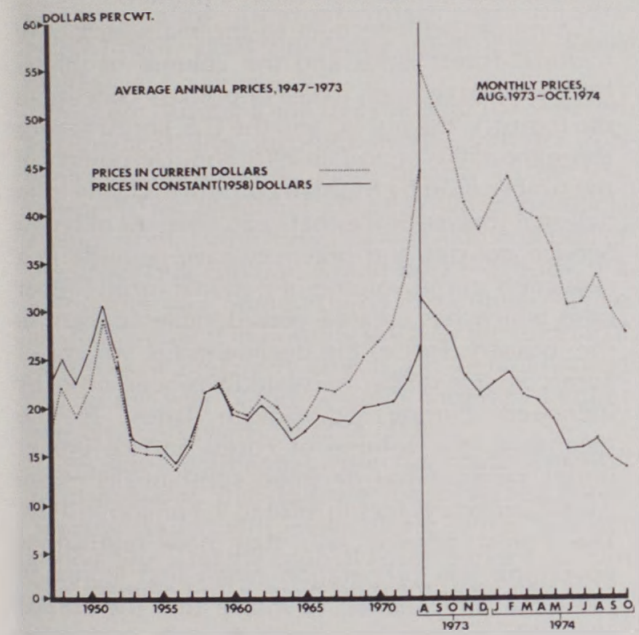
Montana farm product prices have already softened considerably since the high point in 1973. The index of prices for all Montana farm products fell 22 percent between August 1973 and October 1974. Wheat prices, although still strong, are currently (October 1974) 13 percent below their recent high. The prices of beef cattle and calves have declined precipitously from their 1973 peaks. In October 1974, average Montana beef cattle prices were 50 percent below the August 1973 high. (Montana Crop and Livestock Reporting Service.)

It appears that 1974 Montana gross farm income in current dollar terms will be about as high as in 1973. U.S. Department of Agriculture estimates indicate that during the first nine months of 1974, cash receipts from the marketing of crops were about 34 percent higher than for the same period in 1973. Cash receipts from the marketing of livestock during January-September 1974 were about 15 percent below the same period in 1973. On balance, total farm marketings in 1974 should at least equal those in 1973. Net farm income, however, will probably be lower. In terms of current dollars, net farm income for the state in 1974 should approximate the $394 million in 1972.

What will happen to the Montana farm economy over the next two years or so? This is an important question for Montana because of the vital role that agriculture currently plays in the economy of the state. The farm sector provided about a fifth of Montana's personal income in 1973 and almost a sixth in 1972. If farm income deteriorates during the next two years, the general economy of the state will suffer. As we noted earlier, even with the income gains brought about largely by agriculture during 1972-73, Montana has been suffering a

FIGURE 8

BEEF CATTLE PRICES RECEIVED BY MONTANA FARMERS, 1947–1974



SOURCE: Montana Crop and Livestock Reporting Service. Prices adjusted by U.S. Department of Agriculture, Index of Prices Paid by Farmers for all Commodities and Services, Interest, Taxes, and Wage Rates.

decline in real income per person since the middle of 1973.

Montana's economic fortunes over the next two years hinge to a large extent on what happens to wheat and cattle prices. Wheat prices are still close to the 1973 peak. But how long can they stay there? Wheat prices have always been extremely volatile, moving up during periods of war and international inflation and subsiding when such conditions recede. Variable weather conditions add to price volatility. Combinations of inflation and recession now characterize almost the whole of the industrialized world. Under these conditions, it seems unlikely that the rampant international demand for grain that existed in 1973-74 will continue for long. If weather conditions in the United States and other grain growing countries turn out to be more or less normal in 1975, wheat prices could decline considerably. In any event, it appears certain that the current level of wheat prices cannot be maintained indefinitely. Whether the break comes in 1975 or later is open to question.

While wheat prices are high, cattle prices are low. Montana beef cattle prices in real terms (i.e., adjusted for changes in the purchasing power of the dollar) are lower than they have been since the 1930s. This circumstance results largely from the cattle cycle. Cattle numbers in the United States have been expanding since 1967. From 1967 to the middle of 1973, beef cattle prices rose steadily. Normally, a contraction in cattle numbers begins to take place when prices fall. The heavy marketing of cattle in 1974 points to such a contraction. Nevertheless, some build-up in cattle numbers is expected for another year or two. This means no contraction in absolute terms until 1976 or 1977. Until that time, beef cattle prices are likely to remain more or less depressed. There may be some improvement in beef cattle prices in 1975, but the improvement is not expected to be great. On balance, the odds seem to favor lower Montana farm product prices during 1975-76.

The condition of agriculture has been a perpetual problem in Montana and will continue to be so. At the same time, this is a problem that neither the Montana state government nor the Montana public can do much about. Most of the forces that determine the destiny of Montana agriculture are either fortuitous or they are external in origin. Montana agriculture is subject to international and national forces that are not generally amenable to state control or modification. Most facets of agricultural policy can only be adjusted at the national or international levels.

But there are some things that the state government can do to assist Montana agriculture:

1. Continue to provide the necessary resources for agricultural research, education, and extension.
2. Consider changes in state tax laws, especially the income tax law, that would eliminate the penalties inflicted on farmers and ranchers by progressive tax rates in years of unusually high incomes. Some form of income tax "indexing" to lessen such effects may be desirable for both the farm and nonfarm sectors in a state where many incomes tend to be quite volatile.

Wood Products: Problems in Western Montana

The wood products industry ranks as Montana's leading manufacturing industry and is of overwhelming importance in western Montana. Its growth between 1950 and 1969 (together with that of the University of Montana) kept western Montana moving ahead in terms of increased incomes and expanded employment opportunities. A recent report by the University of Montana's Bureau of Business and Economic Research estimated that as much as 43 percent of employment and 51 percent of income in eight western Montana counties are directly or indirectly dependent upon timber activities.

In spite of some rather severe cyclical fluctuations, the wood products industry until recently had recorded a significant increase in employment since 1969—from an average of 8,900 wage and salary workers that year to 9,700 in 1973. (We use 1969 as a benchmark in this discussion because 1970 was a very poor year for the industry and therefore is not a good choice for comparisons. Likewise, 1973 represents the recent high mark, with employment declining in 1974. The data are from the Employment Security Division.)

The past five years have seen considerable change and turmoil within the industry. A number of small sawmills have ceased operation permanently, and more may do so; it is increasingly difficult for such plants to compete. Two new particleboard plants represent progress toward greater utilization of the forest resource. A large new plywood plant is operating in the Missoula area. The pulp and paper mill at Missoula has been given permission to expand its operation; however, there has been no announcement as to when construction might begin.

Accompanying the movement toward greater product diversity have been changes in ownership which have accelerated a trend towards integrated operations and large corporate ownership. The era of the small independent operation is almost over; the Montana industry today consists chiefly of large corporations with a combination of operations designed to better utilize the forest resource and with the financial ability to provide the technology necessary to compete in today's markets.

Questions with respect to the management of national forest lands and the volume of timber harvested have been issues of primary concern to the industry, the public, and the U.S. Forest Service throughout this period. In 1969, about 60 percent of the timber used by Montana producers came from national forests. Since that year, changes in Forest Service policies and practices have resulted in a reduction in the volume of national forest timber sales which has created considerable concern in the industry. Part of the decline in the volume of Forest Service timber harvested has been offset by increased cutting on private lands. In the meantime, the volume of Forest Service timber under contract has declined substantially—from 2.0 billion board feet in 1970 to 1.3 billion in 1974. The Forest Service says that new regulations governing sale preparation mean that increased personnel are needed to insure that the annual allowable cut can be offered for sale each year. Both the industry and the agency have requested federal funds for more intensive forest management. While some of the most productive timber growing areas are in other parts of the United States, the best sites in Montana will compare favorably with other regions and should be eligible for such investment, if and when Congress is willing to appropriate money for that purpose.

Wood products is a volatile industry, strongly affected by changes in housing construction. Thus, since 1969 the industry has experienced two downturns, one which began in late 1969 and lasted till early 1971, and the current, sharp decline which began in late 1974. With U.S. housing starts far below a year ago, the timber industry in Montana currently is in difficult circumstances. The full extent of the decline is difficult to determine. According to the Employment Security Division, employment in the industry fell off by about 2,000 workers between September 15 and October 15. The October estimate of 7,900 workers was 2,400 below the seasonal peak of 10,300 in August and was the lowest October figure since 1961.

We know that there have been further layoffs since mid-October, but we do not know how

many; nor do we know how many workers have been affected by shortened work weeks. This type of concealed unemployment—or under-employment—does not show up in labor force figures.

Western Montana will feel the pinch of reduced employment and incomes in the industry this winter. Unfortunately, there appear to be few prospects for offsetting losses in wood products employment. In the Missoula area, construction of the paper mill addition would be a real boost if it gets under way. Some experts think there may be an improvement in housing starts by the middle of next year. If a recovery does begin then, it may be late in the year before western Montana lumber and plywood plants feel the effects.

It is worth noting that when the housing market does improve, the pressure for increased Forest Service sales will rise along with lumber production, and the issue of Forest Service policies and financing may again be front page news.

Mining: Some Good News, Some Bad News

Table 3 shows that employment in the mining industry, long a mainstay of Montana's economy, increased by 800 between 1970 and 1974. About 200 of these additional jobs were in metal mining, which primarily consists of the operations in and around Butte. These figures do not reflect the announced reduction of 500 to 600 underground miners. It has been fairly common knowledge that underground mining has become relatively more costly. So, these reductions do not come as a real surprise. It is unfortunate that they are scheduled for this winter, however, as it cannot help but add to the problems caused by the depressed conditions in the wood products and other industries.

Recent events suggest a softening in the copper market and this may lead to further declines in Montana's mining activity. We believe these vacillations are simply a continuation of past cycles in the worldwide demand and prices of raw materials. It would not surprise us to see a general decline in mineral prices (excluding coal, gold, and silver, which are influenced by some unique factors) similar to that of the early fifties.

Between 1970 and 1974 there were about 600 new jobs due to increased coal mining in southeastern Montana. Most of this coal has been sold to Midwestern utilities on medium and long-term contracts, and it is unlikely that employment in the coal mines will show the same cyclical ups and downs as other types of mining. Thus, we view these positions as being a relatively stable and secure addition to Montana's economic base. We expect a further modest increase in coal mining employment over the next few years.

Derivative Industries: Where the Jobs Are

Most of the increased employment in Montana between 1970 and 1974 occurred in the derivative industries. In this section we will examine the derivative sector in more detail and attempt to outline some of the factors we believe to be behind these trends.

Table 5 shows 1970 and 1974 employment in Montana's derivative industries. These are the same data presented earlier in table 3 except that several of the industries have been subdivided to facilitate a more detailed analysis. Employment increased between 1970 and 1974 in each of the derivative industries, but retail trade and the services accounted for a disproportionate share of the growth. In fact, the combined growth of 18,900 workers in these two industries represents 55 percent of the total rise of 34,300 jobs in all derivative industries.

Before turning to our analysis, we would like to put the jobs in derivative industries into proper perspective by examining their average earnings as compared to jobs in the primary industries. Table 6 presents the average 1973 earnings for wage and salary workers in selected primary and derivative industries. These figures suggest that, in general, workers in derivative industries earn less than their counterparts in the primary industries. The highest earnings are the $11,050 per year in mining and $12,250 per year for federal government employees. While the average for all manufacturing is significantly lower, at $8,960 per

Table 5

Employment in Derivative Industries in Montana 1970 and 1974

(In Thousands)

Industry	1970	1974[1]	Change 1970-74
Wholesale trade	9.8	12.2	2.4
Retail trade	38.3	47.1	8.8
Eating and drinking places	10.4	14.4	4.0
All other retail trade	27.9	32.7	4.8
Finance, insurance, and real estate	8.1	10.2	2.1
Services	33.7	43.8	10.1
Hotels, motels	4.0	6.3	2.3
All other services	29.7	37.5	7.8
State and local government	40.7	44.5	3.8
Nonrail transportation, communication, and public utilities	10.8	13.1	2.3
Contract construction	11.0	13.0	2.0
All other employment	28.2	31.0	2.8
Total derivative employment	180.6	214.9	34.3

Source: Montana Department of Labor and Industry, Employment Security Division, *Montana Employment and Labor Force* and unpublished data.

[1]Average for the first ten months of the year.

Table 6

Annual Earnings of Wage and Salary Workers in Selected Montana Industries 1973

Industry	Earnings
Mining	$11,050
Manufacturing	8,960
Federal government	12,250
Construction	10,070
Nonrail transportation, communication, and public utilities	9,330
Wholesale and retail trade	5,880
Finance, insurance, and real estate	7,200
Services	4,920
State and local government	7,090

Sources: Montana Department of Labor and Industry, Employment Security Division and U.S. Department of Commerce, *Survey of Current Business* (August 1974), table 54.

year, certain industries such as primary metal refining and paper production pay well above this figure. On the other hand, annual earnings in wholesale and retail trade and the services, where over 40 percent of derivative workers are concentrated and where most of the recent growth has occurred, averaged only $5,880 and $4,920 per year, respectively. It should be noted that the figures in table 6 represent annual earnings for people who work all year; thus, in an industry such as construction, where many workers suffer some seasonal unemployment, actual earnings may be considerably lower.

Earlier in this report we stated that the rapid growth in derivative employment since 1970 may not represent sustainable economic growth. We would like to discuss our reasons for saying this but, first, we must reiterate that these are not hard and fast conclusions. The data are incomplete and the time period too short to establish long-run trends. Further evidence (when it becomes available) may be contradictory or may suggest a different underlying phenomenon. In short, the following paragraphs are our best guesses as to the meaning of the current data; but they are just guesses and may be modified in light of further information.

State and Local Government: A Trend Toward Slower Growth

During the sixties, state and local government was the fastest growing derivative industry in Montana. Employment continued to increase between 1970 and 1974, but at a slower rate. We believe the rapid rise in state and local government during the sixties may be largely attributed to the postwar baby boom. A large proportion of state and local government employees, especially local government employees, are directly associated with education. The number of births during the late forties, fifties, and early sixties led inevitably to increased demands on education. The recent decline in the birth rate suggests that there will be fewer children entering school and less pressure on

state and local governments to expand these facilities.

Tourism: A Major Contributor to Increased Employment

About one-third of the increase in retail trade and service employment between 1970 and 1974 occurred in eating and drinking places and in hotels and motels. Although they also serve local people, these businesses traditionally have been used to represent developments in Montana's tourist industry. The substantial increases in employment appear to reflect a prosperous and growing tourist industry. Certainly 1974, perhaps with the help of Spokane's Expo, was a good year for the travel business. Nevertheless, we are concerned that there may have been some overbuilding in these activities, particularly in motels, and that a decline in travel due to economic conditions and/or fuel availability and cost may bring hard times to the travel industry. According to Employment Security Division figures, another travel-related group—automobile dealers and gas stations—reduced its average annual employment from 9,300 in 1973 to 8,600 during the first ten months of 1974.

Agricultural Prosperity: Good for Main Street

The recent prosperity in Montana's farms and ranches may have contributed to the rapid rise in derivative employment. New jobs may have been created in the trades and services as the net influx of dollars due to increased agricultural receipts were spent and respent within the state. In the interest of brevity, we have not presented the year-by-year data. However, they show that the increases in derivative employment were greater during and after 1972 than before this date. This correlates with the upturn in agriculture and we cannot help but conclude that the two are somehow related.

Working Women

There has been a revolution during recent years in the attitudes of women, especially wives and mothers, toward working outside the home. More and more females are entering the labor force and actively seeking employment. The extent and speed of this development is demonstrated by the national labor force participation rates shown in table 7. These figures show the percent of the population in each age-sex group in the labor force. Labor force participation rates vary slightly from one year to the next, but usually not more than one or two percentage points. Notice, however, the rapid rise in rates between 1970 and 1973 for females under 34 years of age. These large increases (several are almost 5 percent) are remarkable for a period as short as three years. We do not have comparable data for working women in Montana, but it would be illogical to think that the same changes have not occurred here.

Table 7

Civilian Labor Force Participation Rates, by Age and Sex, in the United States 1970 and 1973

(In Percentages)

	Males		Females	
Age Group	**1970**	**1973**	**1970**	**1973**
Total, 16 years and over	80.6	79.5	43.4	44.7
16 and 17 years	47.5	50.5	34.9	39.1
18 and 19 years	69.9	73.2	53.7	57.0
20 to 24 years	86.6	86.8	57.8	61.2
25 to 34 years	96.6	95.9	45.0	50.2
35 to 44 years	97.0	96.3	51.1	53.3
45 to 54 years	94.3	93.0	54.4	53.7
55 to 64 years	83.0	78.3	43.0	41.1
65 years and over	26.8	22.8	9.7	8.9

Source: U.S. Department of Labor, *1974 Manpower Report of the President*, table A-2.

Unfortunately, neither do we have employment figures by sex for years since 1970. Table 8, however, indicates that of the 26,159 new workers added between 1960 and 1970 in trade, services, and finance—those industries where women traditionally have worked—about two-thirds (17,727) were female. Since the trend toward more women working has continued since 1970, we feel

Table 8

Employment by Sex in Selected Montana Industries, 1960 and 1970

Industry	Employment 1960[1]	Employment 1970[2]	Change in Employment 1960-70	Distribution of Employment (Percent) 1960	Distribution of Employment (Percent) 1970
Wholesale trade	7,465	9,360	1,895	100.0	100.0
Male	6,239	7,670	1,431	83.6	81.9
Female	1,226	1,690	464	16.4	18.1
Retail trade	39,629	45,165	5,536	100.0	100.0
Male	22,775	23,468	693	57.5	52.0
Female	16,854	21,697	4,843	42.5	48.0
Finance, insurance and real estate	8,035	9,546	1,511	100.0	100.0
Male	4,369	4,938	569	54.4	51.7
Female	3,666	4,608	942	45.6	48.3
Services[3]	51,451	68,668	17,217	100.0	100.0
Male	20,374	26,113	5,739	39.6	38.0
Female	31,077	42,555	11,478	60.4	62.0
All trade, finance, and service industries, total	106,580	132,739	26,159	100.0	100.0
Male	53,757	62,189	8,432	50.4	46.9
Female	52,823	70,550	17,727	49.6	53.1

Sources: U.S. Bureau of the Census, *U.S. Census of Population: 1960, Detailed Characteristics, Montana*, table 129; and *indem, U.S. Census of Population: 1970, Detailed Characteristics, Montana*, table 186.

[1]Persons fourteen years of age and older.

[2]Persons sixteen years of age and older.

[3]Includes business and repair services, personal services, entertainment and recreation services, and professional and related services.

safe in assuming that many of the new jobs in the trade and service industries have been filled by female workers.

Perhaps the greatest significance of this development is the apparent addition of a good many second earners in Montana families; obviously higher labor participation rates and more earners per family accelerate the growth of both per capita and family incomes. At the same time, when the rather impressive increase in the number of new jobs in these industries is cited, it is well to remember that many of them are not jobs suitable for heads of families.

Average Weekly Hours

Earlier we saw that derivative workers, on the average, have significantly lower annual earnings than do workers in primary industries. This may be partly due to the fact that they tend to work fewer hours per week. Table 9 presents the average weekly hours for wage and salary workers in selected Montana industries between 1969 and 1973. Notice that the employees in the two largest derivative industries—wholesale and retail trade and the services—tend to work the fewest hours per week. This suggests to us that simply looking at the number of jobs may overstate the growth in these industries. If employment were converted to full-time equivalents—a 40-hour week—the increases would be more moderate. In the trade and service industries, for example, the increase in full-time job equivalents appears to have been about 14,600, in contrast to the 21,300 new jobs actually reported.

Also, it is interesting to note the general

Table 9

Average Weekly Hours in Private Nonagricultural Industries, Montana, 1969-73

Industry	1969	1970	1971	1972	1973
Manufacturing	40.3	40.0	39.8	40.8	40.2
Mining	42.0	41.3	43.1	41.7	41.2
Contract construction	38.3	37.0	36.8	37.3	37.6
Transportation and public utilities	41.7	41.6	41.2	41.5	40.8
Wholesale and retail trade	37.6	37.7	36.0	35.4	35.7
Finance, insurance, and real estate	35.9	37.2	37.3	36.3	37.0
Services	35.1	34.8	34.6	33.5	33.2

Source: Montana Department of Labor and Industry, Employment Security Division, *Montana Labor Market*, Supplement II and *Montana Employment and Labor Force*, table X.

downward trend in weekly hours in wholesale and retail trade and especially in the services, where there was a decline of over two hours per week between 1969 and 1973. This correlates with the previous observations concerning working women; it is just what we would expect the figures to show if there were an increasing number of working wives and mothers, for whom part-time jobs may be most convenient.

Implications of Inflation on State Revenues and Expenditures

From a fiscal point of view, state governments—including Montana's—tend to benefit from inflation, particularly during the early stages of inflation. The reason for this phenomenon is obvious. State governments budget at one price level and collect the taxes to finance the budget at higher price levels. With given tax rates, tax collections, especially income and excise tax collections, tend to rise as the price level and money incomes rise, while expenditures tend to lag. Wages and salaries of government employees are examples of expenditures that are especially likely to lag behind rises in the price level. Wage and salary rates tend to be fixed in money terms for a year and often for two years in the case of biennial budgets.

In a way, Montana has been fortunate to have such heavy reliance on the income tax. An income tax with progressive rates such as we have in Montana brings increased revenue in two ways as the price level rises. First, state revenue rises with inflation merely because of the concurrent rise in money incomes. Second, with a progressive rate structure, *the effective tax rate rises* as income recipients move into higher rate brackets. Economists refer to such relationships as "built-in flexibility." (It should be noted that local governments, heavily dependent on the property tax, do not enjoy such flexibility.)

We should be aware that the built-in flexibility inherent in the Montana tax structure represents a mixed blessing and that in the long run it may be no blessing at all. There are several reasons for this statement:

1. State government gains through such built-in flexibility are likely to be transitory and illusory. Budget surpluses often disappear quickly as a result of public and political pressure for increasing state expenditures and/or reducing tax rates. Such actions are likely to be in conflict with fiscal pragmatism and the public interest.

2. After a while, the prices that the state government pays for goods and services will rise and any initial benefits from inflation will disappear. This will happen rather quickly in the case of commodities, but somewhat later in the case of wages and salaries for public employees as state agencies find it necessary to keep salaries competitive with the private sector. So, state government will soon discover that its "windfall revenues" are eroded and that its revenues in real terms are declining.

3. While state government as a fiscal entity may gain from the built-in flexibility in the tax system, the public may not and probably will not. During inflation the state income tax structure dictates higher effective income tax rates. *But if the income growth rate in the state*

is lower than the inflation rate, the ability of the public to pay taxes declines when measured in real terms.

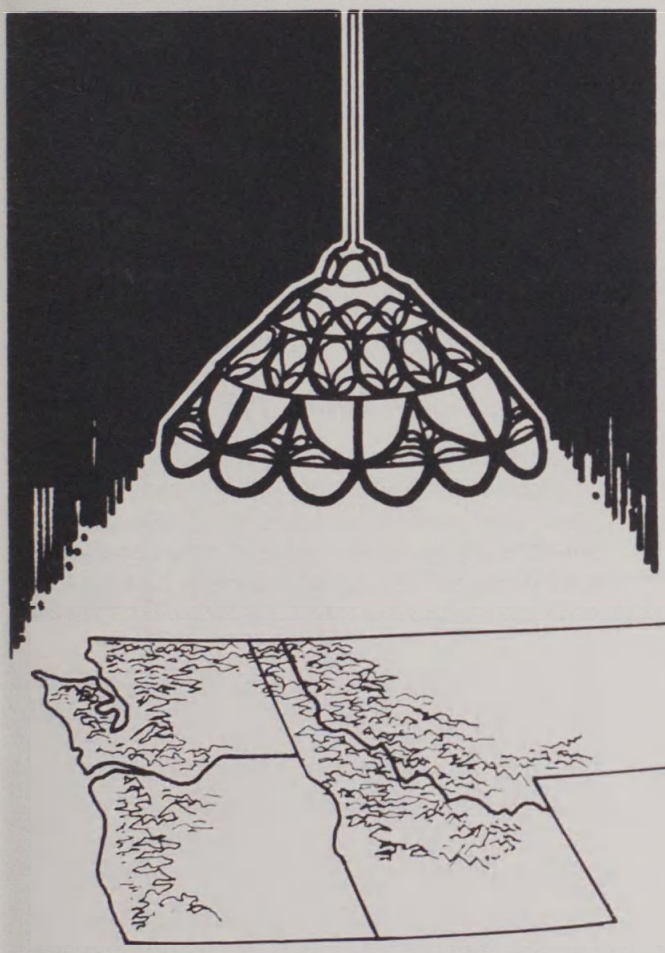
Montana's state government windfall revenue gains from inflation may soon be a thing of the past. The large increases in revenue collections in the past two years are not likely to be repeated. In real terms, tax collections may show very modest increases in the next few years.

Montana's Usury Law: Aggravating Financial Problems

Just as the cost of other commodities increased in the United States in 1974, so did the cost of money. The prime rate (the rate charged by commerical banks on short-term loans to large businesses with the highest credit standing) rose to 12 percent, and exceeded 10 percent during most of the year.

Montana's usury law limits the rate of interest charged by financial institutions to 10 percent. During the past year, the law has limited the return Montana institutions could earn on loans, and as a result they have been unable to compete with out-of-state banks on interest paid to depositors. There is evidence that relatively large amounts of money were transferred from Montana banks to take advantage of higher returns in other states. Such losses, of course, reduce the amount of funds available for loans to Montanans. Low interest rates reduce the cost of borrowing money; but low interest rates are useless if banks haven't enough money to loan, because their resources have been drained out of state.

Some relief may accrue to state financial institutions as a result of recent federal legislation; however, the federal law is restricted in its application and the 10 percent limitation will continue to apply to a good many in-state transactions.



PROJECTING PACIFIC NORTHWEST DEMANDS FOR ELECTRICITY

RICHARD STROUP

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"It is quite possible that current plans by utilities to greatly expand their generating capacity are very inappropriate"

For decision makers and planners in the northern Great Plains, projections of electric power demands, particularly those from the Pacific Northwest market, are vitally important. If, for example, eastern Montana is to change from an area of declining population to one of substantially increasing population and economic activity in the next few decades, this will probably come about through increased coal mining and energy conversion activities in the area. In turn, the likelihood of this happening depends heavily on whether the rest of the United States will want to buy substantially increased amounts of electricity generated from coal in the area. Until very recently at least, most projections used by government agencies and utilities have implied a continuation of the geometric growth in the use of electrical

energy which has been evident for several decades in the United States. Figure 1 clearly shows this trend. Power use has more than doubled in every decade after 1940. For Montana in particular, the Pacific Northwest comprises a very important segment of the external demands for coal-based energy, as evidenced by the fact that well over half of all the power to be generated in Colstrip plants 1, 2, 3, and 4 is scheduled to be exported from Montana for use in Washington, Idaho, and Oregon. As in the rest of the United States, the use of electrical power in the Pacific Northwest has increased substantially over the last few decades.

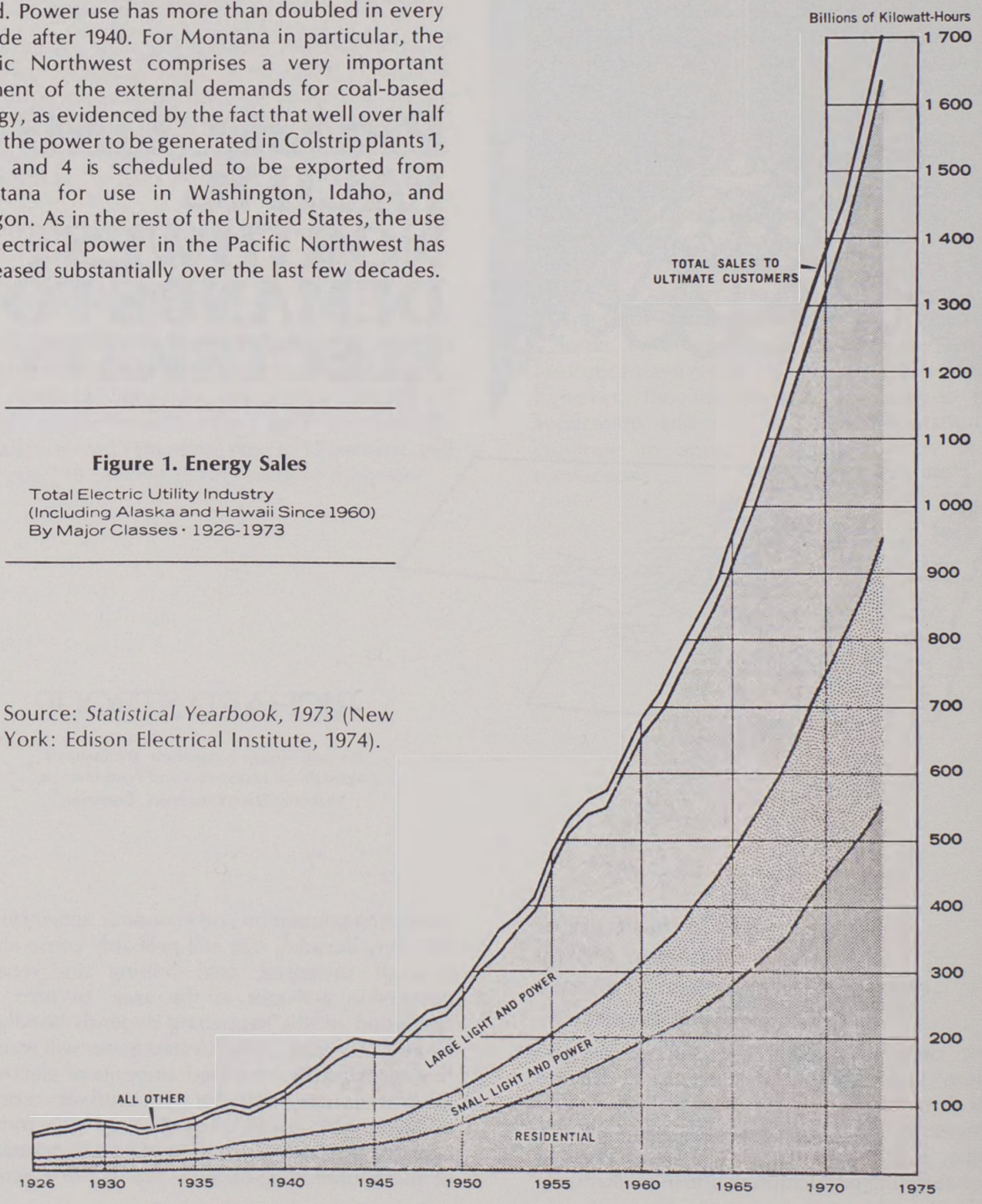


Figure 1. Energy Sales

Total Electric Utility Industry
(Including Alaska and Hawaii Since 1960)
By Major Classes · 1926-1973

Source: *Statistical Yearbook, 1973* (New York: Edison Electrical Institute, 1974).

Recent data, however, show that nationally the rate of increase in the use of electrical power has slowed; it has, in fact, been reported that the amount of electrical power used actually fell during the first ten months of 1974. Table 1 illustrates the dramatic change.

> *"Nationally the amount of electrical power used actually fell during the first ten months of 1974"*

To make accurate projections about the use of electrical energy in the future, or even to interpret properly the projections of others, one must understand the factors behind the past trends and then make an evaluation of future changes in these factors.

Table 1

Annual Growth Rates for U.S. Electricity Use

Period	Growth Rate
1955-1973	7.28%
1965-1970	7.85%
1970-1973	6.97%
1973-1974[a]	-0.02%

Sources: Edison Electric Institute data, published in *The U.S. Fact Book, 1975: The Statistical Abstract of the United States* (New York: Grosset and Dunlap, 1975) and in the *Survey of Current Business*, December 1974.

[a]First 10 months of 1973 to first 10 months of 1974.

Understanding Time Trends

A large number of electricity-use projections are in fact simple projections of time trends. Assumptions about population growth and/or weather variables often are thrown in, but time itself is usually treated as the dominant element and past trends are assumed to continue. In reality, of course, time itself is not the motive force. Factors changing systematically *with* time are the cause of changes. The major factors usually cited as actually controlling the growth of electricity usage are income, technology or the appearance of new products, population, and the requirements for environmental protection measures. So long as these factors changed over time in a fairly uniform manner and in the same direction, the simple extrapolation of time trends was a fairly good predictor of future electricity usage. Recently, however, these trends have substantially overestimated actual usage. Except for recent dips in income, the factors cited above are changing in the same direction as before. Population, of course, has ceased to grow as fast as in the recent past. However, even the per capita power projections are substantially higher than recent reality. What has gone wrong? Why are many projections now apparently overstating the amount of growth?

The Importance of Price

One factor left out of most projections until very recently has been the price of electricity. Despite a number of studies (cited in table 3) showing that the use of electricity does in fact vary inversely with its price, the projections made by utilities and by most government agencies have ignored this factor. During the decades from 1940 to 1970, the rapidly increasing use of electrical power occurred while the real price of electricity was falling substantially. Only since 1970 has the price of electricity begun to rise, relative to other prices. Since then, the rate of increase in electricity usage has begun to decline. Thus, while there is historical support for simple time trends, these trends were developed during a series of decades when all the underlying factors, including price, moved together consistently. Recently, electric utilities have had to revise their projections. However,

since these projections are for the most part based mainly on time, it is very difficult for the forecasters to construct projections in which they have confidence, because the factors underlying the demand for electricity are shifting rapidly and in historically unusual patterns.

Due to essentially irreducible lags of several years between the decision to build a new power plant and the time that such a plant comes on-line, utilities and responsible regulatory bodies must commit themselves years in advance, acting on what they consider the best available projections of future demands for electricity. Currently, future plans are being made on the basis of forecasts based on simple time trends, where price is typically ignored. Under these conditions, it is easy to assume that the current departure from long-term exponential growth in power demands is a momentary dip in the curve, rather than the beginning of a continuing divergence from an exponential rate of growth. Yet if price has actually been an important underlying factor, then a return to high and accelerating rates of growth in electrical demand is very unlikely. The relative price of electric power, which dropped steeply until about 1970, has begun to climb at an accelerating rate. All indications are that the real price of electrical power—the money or "nominal" price, corrected for inflation—will continue to rise sharply. If either economic theory or the many statistical studies of the relationship between the price of electrical power and the quantity demanded are meaningful, then it is quite possible that current plans by utilities to greatly expand their generating capacity are very inappropriate. The remainder of this paper will be devoted to examining the possibility that this is indeed the case, and that a fairly dramatic change in power demand projections is appropriate.

Price Up, Demand Down?

Table 2 illustrates how the real price of electricity declined between 1940 and 1970. As we have already noted, the quantity demanded rose steeply over the same period. In 1970 the price of electrical power stopped its sharp downward fall and began an upward rise. Since that time the rise has accelerated, and between October 1973 and October 1974, the rate of increase of the price of electricity to consumers was 22 percent, or 9 percent in real terms. Wholesale power prices have risen 35 percent, or 10 percent in real terms.[1]

Table 2

Indexes of Real Electricity Prices 1940 to 1974

Year	Consumer Index [a]	Wholesale Index [b]
1940	228	NA
1950	126	NA
1960	113	107
1965	105	104
1968	97	98
1970	91	96
1971	93	100
1972	95	102
1973	94	95
1974 (Oct.)	101	105

Sources: U.S. Bureau of Labor Statistics data, published in *The U.S. Fact Book, 1975: Statistical Abstract of the U.S.* (New York: Grosset and Dunlap, 1975); and *Monthly Labor Review*, December 1974.

[a] Composite consumer electricity price (1967 = 100) divided by Consumer Price Index (1967 = 100)

[b] Wholesale electricity price index (1967 = 100) divided by Wholesale Price Index (1967 = 100)

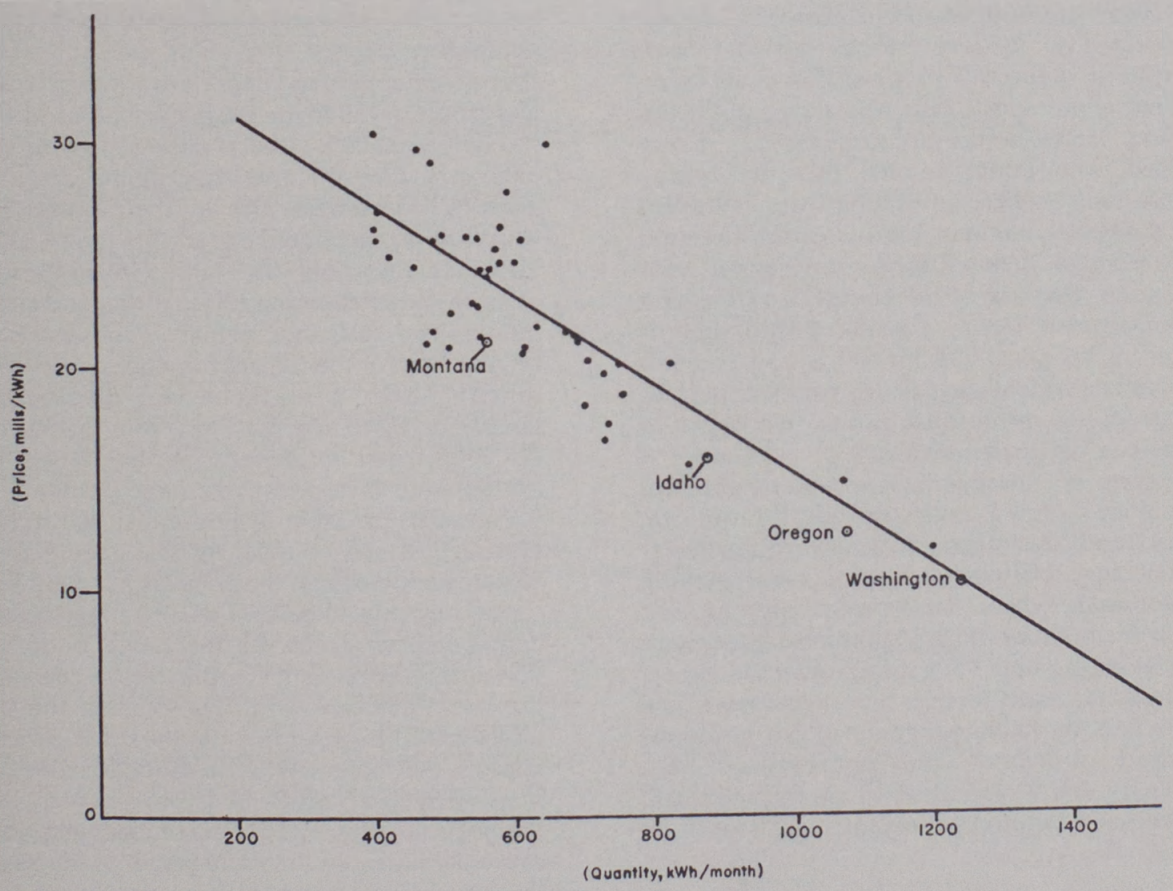
Studies of the impact of price on electricity demand show, for the most part, strong price effects. However, they also show rather long lags. Chapman, Tyrell, and Mount, in a study cited in table 3, say that the first year of a price increase sees only 10 or 11 percent of the demand adjustment; it takes seven to eight years for the first 50 percent of the total reaction. If these studies are even roughly accurate in their estimates of strong negative impacts of price on quantity demanded, then it is very unlikely that the growth in electricity demand will resume its former geometric shape in the foreseeable future. The full reaction to recent price hikes remains to be felt, and fairly strong increases are predicted in real electricity prices for the future.

[1] U.S. Department of Labor, *Monthly Labor Review*, December 1974, p. 111.

Looking for Ways To Save a Watt

If one is not prepared to accept at face value the econometric studies or the economic theory behind them, is it reasonable for one to expect the price of electricity *really* to affect sales? The demands for electric power usually are discussed as "needs." However, there are many possible responses to price increases, short of "freezing in the dark." Many utilities put out consumer tips on how to cut electrical bills, though when they discuss rate making, they profess to believe that there is little price responsiveness, despite the many possible responses. In any case, consumer interest in the energy efficiency of such items as homes and air conditioners is becoming more evident, and figure 2 shows that residential users in

> *"Residential users in states with high electricity prices use far less electric power than people in states where lower prices prevail"*



Data Source: Impact Study: BPA Proposed Rate Increase, Bonneville Power Administration, November 1973

Figure 2. Residential Electricity, 1971 (Price and Consumption by State)

states with high electricity prices use far less electric power than people in states where lower prices prevail.

Probably the most imaginative responses are being observed in industry. A March 11, 1974, *Wall Street Journal* article ("Manufacturers Save Millions by Increasing Efficiency in Energy") relates several instances of new approaches to saving energy in industry. Dow Chemical Company, for example, recently hired a twin-engine plane equipped for military reconnaissance missions to use an infrared scanner on its 4,500-acre production complex in Midland, Michigan. This scanner detected heat losses from several sources which were later controlled to conserve energy, or, more directly, to save money for the firm. Specialists in industrial furnace efficiency are being used more intensively, heat exchangers are being installed, and inefficient turbines are being replaced. The article reports that the Energy Management Services consulting team of the Du Pont Company has had more than a threefold increase in the demand for its services this year relative to last year. The Energy Conservation Coordinator of Union Carbide Corporation is quoted as saying, "A lot of things you couldn't justify when you were paying twenty cents per million Btu's seem justifiable now, when you're paying one dollar per million."

As sales of energy-efficient equipment and technology become easier and more profitable, research and development to achieve more savings is encouraged. The new Alcoa process for smelting aluminum with 30 percent less electricity than used by current methods will probably be adopted more quickly, for example. Of course, we would expect responses to be greater over time. After more time has elapsed, and habits have been more thoroughly changed, more of the energy-inefficient machinery and techniques will be replaced, and research and development efforts will bear more fruit.

The Evidence of Price Impact

It is all well and good to theorize, reason, and look at specific examples. But *has* price really had an impact? Casual evidence as well as careful statistical studies seem to confirm the expectation that indeed price has had an impact. The decline in the rate of electricity sales increases, following the sharp upturn of prices since 1970, as well as the widely differing residential consumption by state as correlated with price differences, tends to support the assertion that price is an important element. Careful statistical studies also support this idea. Most show a strong price impact, especially on a long-run basis. The responses of commercial and industrial users are generally shown to be stronger than the responses of residential users.

Several statistical studies have investigated the relationship between the price of electricity and the quantity demanded. The ratio of (a) the percentage change in quantity demanded to (b) the percentage change in price causing that change in quantity, is called the elasticity of demand. Since the various elasticity studies differ somewhat in the data they use, the way they define price, and quantity demanded, and in their econometric specification, we would expect that their elasticity estimates also would vary. Table 3 shows the range of estimates for several studies. All the estimates are for long-run elasticities, so that several years would be required for the full adjustments to a new price to take place. It would be very inefficient for people to try to change their living habits, their buildings, their machinery, or their technology *immediately* in response to a price change.

According to table 3, residential demands for electricity display an elasticity near unity. That is, a 10 percent increase in the price of electricity would cause roughly a 10 percent decline in the quantity demanded of electricity (the range is from 8.4 percent to 13.0 percent). If other factors changed in the meantime, we would expect that the price effect would be in addition to the other effects. It appears that commercial demands for electricity are slightly more elastic. A 10 percent increase in the price to commercial users of electricity would cause slightly more than a 10 percent reduction in the quantity demanded (from 9 percent to 15 percent), other factors taken into account. Industrial demands seem to be the most sensitive to price. The studies cited here indicate that a 10 percent rise in the price of electricity to industrial users would lead to a 15 to 24 percent decline in the

quantity demanded by industrial users, given the other determinants of demand.

In addition to the response of quantity demanded as a result of changing electricity prices, most econometric studies consider also the effects of changes in income, and the prices of close substitutes. In the case of electricity, the price of natural gas if often included as a determinant of demand. Population also is normally included, usually with demand being figured on a per capita basis. Chapman, Tyrell, and Mount, for example, find that the income elasticity of demand for electricity varies from 0.3 for residential consumers to 0.9 for commercial consumers. In other words, an increase of 10 percent in income leads to an increase of 3 percent in residential demand for electricity, and a 9 percent increase in the demand for electricity by commercial users. Natural gas is, in most areas, the closest substitute for electricity. Elasticity of demand for electricity with respect to the price of gas is estimated at 0.15 by Chapman, Tyrell, and Mount, and 0.31 by Wilson. If these

Table 3

Estimated Price Elasticity for Electricity

Study	Residential	Commercial	Industrial
Anderson[a]/	-0.84,-1.12		
Chapman, et al[b]/	-1.3	-1.5	-1.7
Halvorson[c]/	-1.0	-0.9,-1.2	-1.5,-2.4
Tyrell[d]/		-1.4	-1.8
Wilson[e]/	-1.3		

[a]/K. Anderson, *Residential Energy Use: An Econometric Analysis*, Prepared for NSF, R-1297-NSF, October 1973.

[b]/D. Chapman, T. Tyrell, and T. Mount, "Electricity Demand Growth and the Energy Crisis," *Science*, Vol. 178, No. 4062 (November 17, 1972), pp. 703-708.

[c]/R. Halvorson, "Demand for Electric Power in the U.S.," presented to the Econometric Society at the Winter Meetings, New York, December 1973.

[d]/T.J. Tyrell, *Projection of Electricity Demand* (Oak Ridge, Tenn: Oak Ridge National Laboratory, November 1973).

[e]/J.W. Wilson, "Residential Demand for Electricity," *The Quarterly Review of Economics and Business*, Vol. 11, No. 1, (Spring 1971), pp. 7-22.

estimates bracket reality, then a 10 percent increase in the price of natural gas would lead a 1.5 to 3.1 percent increase in the quantity of electricity demanded, given the other influences operating.

Revised Forecasts Needed

Taking price into account has a substantial effect on projections of electricity demand. The Federal Power Commission has projected that by 1990, electricity demand will reach 5.83 trillion kilowatt hours, compared to the 1970 figure of 1.53 tkwh. However, Chapman, Tyrell, and Mount, using their elasticity figures and assuming that prices will merely double by the year 2000 (they are increasing at a much faster rate than that now and are expected to continue to do so), and using standard population assumptions, project a much more moderate growth to only 2.11 trillion kilowatt hours demanded by 1990. One factor used in deriving the latter figure probably leads to an underestimate of demand. The authors assumed a 13 percent increase in the price of natural gas from 1970 to 1990 (projection from the Federal Trade Commission). Actually, gas prices will probably rise considerably more than that. On the other hand, population growth was assumed to be at a rate of 1.4 percent per year, with a growth of 4 percent in GNP. These factors appear now to be too high, resulting in an estimate of electricity demand that is too high. Since the elasticities used in deriving these numbers were "middle of the road," it seems reasonable to interpret the final demand estimate as being roughly representative of what projections would result from using "middle of the road" numbers for prices, price elasticities, income growth, and population changes. Such projections vary dramatically from those based on a time trend fitted from, say, 1950 to 1970 data. One resulting implication is that growth in electrical demand is likely to be far lower than that predicted by the Federal Power Commission, other government agencies, and public utilities. Another implication is that when utilities apply for and receive price increases, the increase in their revenues is likely to be significantly less than they expect. Together, these two factors may lead to poor planning and indeed to possible disaster for some utilities.

In the past months, numerous articles have appeared in business-oriented publications, questioning whether, when the full impact of customer adjustments to recent price increases are felt, utilities will be able to pay for the large expansions in generating capacity now being planned and implemented. (See, for example, "Electric Utilities Face a Price Dilemma" in *Business Week*, February 2, 1974). For years, rising income and population have caused increased demand for electricity even at nominally higher prices. The net result to utilities was greater revenue. Now that costs for the utilities are rising in both nominal and real terms, their price increases are big enough to outpace inflation, so that customers must give more in *real* terms for a kilowatt-hour of electricity. The result is that price rises no longer produce large increases in total revenue.

After years of success in using geometric demand projections, ignoring the impact of price on sales, and using price increases whenever added revenue was needed, utility managers probably should be pardoned for being slow to recognize the new and radically different price-quantity relationships that now prevail. Their desire for ever-greater expansion of capacity can be better understood also when it is realized that for most electric utilities, profit cannot grow appreciably unless and until their rate base (roughly, their investment) grows. For nonprofit utilities, the realization that a growing bureaucracy is usually a happier bureaucracy provides an analogous (if weaker) incentive. It must also be recognized that demand forecasting for any one utility's service territory, with or without price considerations, is very difficult—more so than for wider areas, where errors may tend to cancel one another.

The Outlook for the Pacific Northwest

If rising rates nationally can be expected to reduce substantially from projected levels the amount of electric power demanded, what is the outlook for the Pacific Northwest? Due mainly to an abundance of low-cost hydroelectric power, the Pacific Northwest in general enjoys very low rates relative to the rest of the country. Nationwide, about 16 percent of all electric power is generated

> *"The impact of price increases is likely to be even stronger in the Pacific Northwest than in the rest of the nation"*

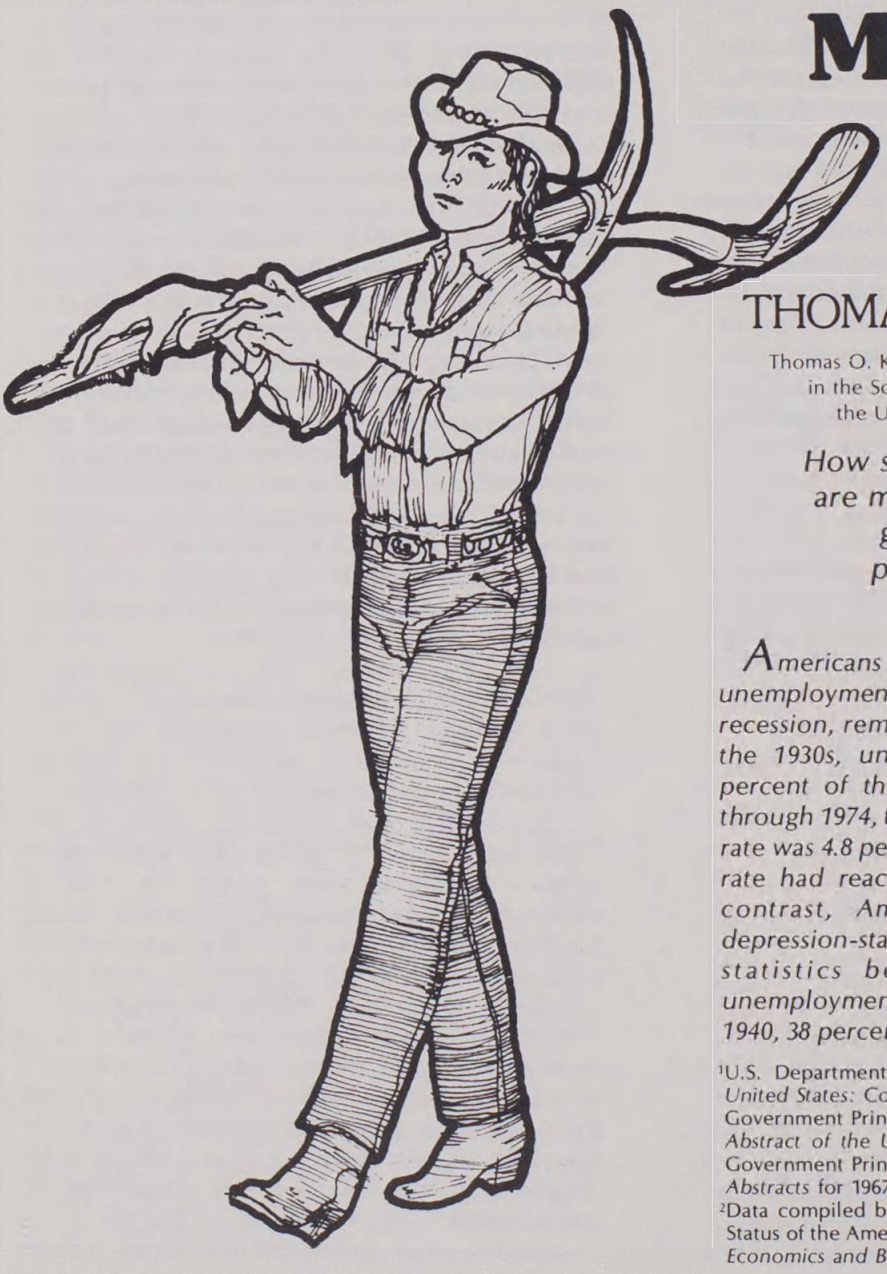
with water, while in the Pacific Northwest almost 97 percent is generated in this way. To the extent that power demands do grow, it is expected that this growth will come largely from nonhydroelectric sources, because most of the good water power sites have already been used. The cost of electricity from nonhydropower sources is substantially higher and rising rapidly, so it seems likely that price increases in the Pacific Northwest will be substantially larger, in percentage terms, than in the rest of the United States. It thus seems likely that the impact of price increases, important for the United States, will be even stronger in the Pacific Northwest than in the rest of the nation.

Summing Up

Demands for electric power often are projected to continue their growth at a geometric rate. Such projections, based on data accumulated during several decades of falling real prices for electricity, yield faulty forecasts because they ignore the role of price. While price certainly is not the only important factor, there is a large and growing body of evidence that (a) it is quite important and (b) its influence has changed from that of being a strong positive to that of being a strong negative factor. In 1970, real electricity prices reversed their long and substantial fall. In recent months, the rate of increase has accelerated. The result is that growth projections ignoring this dramatic change are likely to be dramatically wrong, and more so as time passes and the lagged impacts of price increases are felt. There is, in fact, growing concern in financial circles (and publications) that rapid electric utility expansion might not be justified by future revenues even with price hikes, given the impact of higher prices on quantity sold.

Due to its very low power rates, made possible by an extraordinarily high percentage of power from hydroelectric sites now largely exploited, the Pacific Northwest will probably feel that impact of higher generation cost even more than the rest of the United States. Hence, projections for this area, made without proper inclusion of the price element, are especially susceptible to overestimation of power demands for the next several decades.

INDIAN EMPLOYMENT PRACTICES IN MONTANA



THOMAS O. KIRKPATRICK

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How some of the state's employers are meeting minority employment goals, and suggestions for improving employment practices

Americans are intensely concerned about unemployment rates in the current national recession, remembering that in the depression of the 1930s, unemployment rates hovered at 25 percent of the national labor force. From 1940 through 1974, the average national unemployment rate was 4.8 percent.[1] *By the beginning of 1975, the rate had reached approximately 7.5 percent. In contrast, American Indians have endured depression-status unemployment since keeping statistics became fashionable. National unemployment rates for Indians were 33 percent in 1940, 38 percent in 1960, and 29 percent in 1970.*[2] *In*

[1]U.S. Department of Commerce, *Historical Statistics of the United States: Colonial Times to 1957* (Washington, D.C.: U.S. Government Printing Office, 1960), p. 73; and *idem, Statistical Abstract of the United States: 1963* (Washington, D.C.: U.S. Government Printing Office, 1963), p. 219. Also, see *Statistical Abstracts* for 1967, p. 219, and 1974, p. 336.

[2]Data compiled by Alan L. Sorkin, "The Economic and Social Status of the American Indian, 1940-1970," *Nebraska Journal of Economics and Business*, Vol. 13 (Spring 1974), p. 44.

Montana, the urban Indian labor force had an unemployment rate of 19 percent in 1970;[3] the rate in 1973 for Indian persons living on or adjacent to the state's seven reservations was 38 percent.[4] Montana's Indian population has not shared equitably with the rest of the state's population during the past decades of relative prosperity. Unemployment and underemployment in low-paying jobs have created persistent conditions of poverty and accompanying social ills for many Indian families.[5]

During the summer and fall months, 1974, the Montana Foundation of the Montana Chamber of Commerce conducted a study of Indian employment in Montana, North Dakota, and South Dakota, in which a total of 102 firms and nonprofit organizations with Indian employees were surveyed, including 32 in Montana.[6] An additional 94 firms with no Indian employees were also surveyed, including 5 in Montana. The intent of the project was to help business improve employment practices with respect to Indian workers, and the research was designed as a pragmatic instrument to help achieve that aim. A major objective was to assist firms in attaining their affirmative action goals as required by the Civil Rights Act of 1964 and directives of the federal government. (Affirmative action plans are described in some detail in the following pages.)

Personal interviews were used to obtain data from firms in the three states. The first interviews were with personnel managers, their delegates, and general managers of firms. Interviews were made on a basis of *firms* rather than *establishments* since several of the firms operate numerous establishments in a state. Following the interviews with employers, trained Indian interviewers surveyed current and former Indian employees of the firms previously contacted.[7]

Focus on Indian Employment Practices in Montana

This article will discuss Indian employment practices in medium- and large-sized businesses in Montana and their experiences in employing and retaining Indian persons.[8] Although our study provides only a mosaic view of the real world, we will see that many of the state's firms say they are interested in employing an increased number of Indian people and that the stereotype of the lazy Indian does not hold water. In fact, the employers surveyed stated that they have fewer grievance problems with Indian employees than with non-Indians.

The Montana firms interviewed were selected as follows: The emphasis was on interviewing at firms having affirmative action plans (twenty-eight out of thirty-seven firms had plans), businesses with Indian persons currently employed or employed within the past two years (thirty-five of thirty-seven did), firms representing a broad spectrum of major industries in the state, and firms providing a wide geographic distribution although concentrating in major population centers and communities located near Indian reservations. The sample selected for Montana is relatively small, but it consists of larger businesses which provided approximately 9 percent of average nonagricultural employment of the civilian labor force during June, July, and August 1974.

This study should not be interpreted as scientific research. The sample was purposely selected to provide a wide representation of firms which employed Indian workers. While not a random sample, it is believed to represent conditions and practices of employment in intermediate- and large-scale firms in Montana. Yet, the reader is

[3]U.S. Department of Commerce, *American Indians* (Washington, D.C.: U.S. Government Printing Office), table 4, p. 31.

[4]U.S. Department of Commerce, *Federal and State Indian Reservations* (Washington, D.C.: U.S. Government Printing Office, 1974), pp. 269-287.

[5]For additional information about Indian poverty in Montana, see the special issue, "Some Views from Indian Country," *Montana Business Quarterly*, Vol. 8, No. 4 (Autumn 1970).

[6]The vast majority of these organizations are businesses; of thirty-seven organizations surveyed in Montana, only two were not. One of these was a large hospital and the other, an agency of the federal government. The term, "firm," is used hereafter for simplicity.

[7]Questionnaires used are on file in the Bureau of Business and Economic Research, University of Montana. Copies are available on request.

[8]Additional information for the three states is available from the Montana Foundation, Montana Chamber of Commerce, Box 1730, Helena, Montana 59601.

cautioned not to assume that findings are representative of all state employers. It is also possible that, in discussing an area subject to government regulation, spokesmen may tend to present situations in as favorable a light as possible.

Interpretations of data are made by the author and do not reflect the opinions of the Montana Foundation or the Montana Chamber of Commerce.

Characteristics of the Montana Firms

The firms surveyed may be described by such characteristics as the total number of persons they employ, Indian and non-Indian, and by the number of employees per firm. Employers' responses to the questionnaires show that the persons employed by the thirty-seven Montana firms numbered as follows:

	Total Employees	Indian Employees	
		Number	Percentage of Total
Full-time	21,249	547	3
Part-time	2,711	119	4
Total	23,960	666	3

The sizes of the firms ranked by number of employees were:

Number of Employees	Number of Firms	Percentage of Firms Surveyed
Less than 10	1	3
10-24	6	16
25-49	2	5
50-99	8	22
100-499	11	30
500 and over	9	24
Total	37	100

Since twenty of the thirty-seven firms surveyed employed more than 100 persons, they clearly are among the larger Montana employers. This is not surprising; the more jobs—and the more kinds of jobs—a business offers, the more opportunities there may be for Indian persons to be hired and promoted. As mentioned above, one of the criteria for selection was the presence of Indian workers.

Characteristics of the Indian Workers

Employers provided information about Indian employees on a confidential, nondisclosure basis. For smaller firms, all Indian employees are included, but in firms employing over 10 Indian persons, data were gathered on a sample basis. Thus, in thirty-seven firms employing a total of 666 Indian persons, information for a sample of 158 Indian employees was obtained. The *percentages* of these employees falling into certain descriptive categories are as follows:*

Sex:
- Male 66
- Female 34

Age:
- Under 18 1
- 18-24 30
- 25-34 45
- 35-44 11
- 45-54 10
- 55-64 3
- 65 and over 1

Marital status:
- Married 61
- Not married 39

Number of dependents (including the employee):
- 1 27
- 2 19
- 3 18
- 4 12
- 5 7
- 6 or more 10
- Unknown 8

Education:
- Less than 8th grade 2
- Less than high school 19
- Completed high school 41
- Less than 4 years of college 12
- College graduate 4
- Other (e.g., vo-tech) 8
- Unknown 15

Tribal affiliation:
- Tribes cited by employer 30
- Tribes unknown by employer 70

Length of employment:
- Less than 1 year 35
- 1 year 14
- 2 years 16
- 3-5 years 16
- 6-10 10
- 11-20 years 5
- 21 years of more 4

*Percentages may not add to 100 because of rounding.

Employment Practices of the Montana Firms

Employment practices covered in our study are: 1) use or disuse of affirmative action plans to ensure equal employment opportunity under the law; 2) ways in which firms obtain their Indian employees; and 3) personnel policies which encourage or discourage job stability among Indians.

Affirmative action plans. According to Executive Order for Federal Contractors No. 11246, dated September 24, 1965, businesses obtaining federal government contracts of $50,000 or more, or employing 50 or more persons, are required to file and have approved agreements whereby they consent not to discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Furthermore, firms are required to take affirmative action to ensure that discrimination does not occur. Affirmative action frequently requires determining underutilization of minority workers, setting goals and timetables, and taking related actions to increase minority employment. Other businesses with fewer than fifty employees are governed by Title VII of the Civil Rights Act of 1964 and existing human rights legislation of the state of Montana.[9]

Twenty-eight (76 percent) of the sample firms had affirmative action plans. (Some of the smaller firms do not come under federal laws requiring the plan.) Of the twenty-eight plans, almost 68 percent had been reviewed by a compliance officer of the federal government; another 11 percent of the plans had not; and 21 percent of the firms did not know if their plans had been reviewed. Fifty percent of the organizations had been able to meet their Indian employment goals, while 14 percent had not; 36 percent did not know whether or not they had achieved their Indian employment objectives.

Confusion surrounding implementation of affirmative action plans is apparent. The major cause of difficulty appears to be management's lack of enthusiasm and support. Most firms do not have employees devoting full time to administration of The Plan. The Plan is an additional activity heaped upon an already busy staff employee. The employee, in turn, may view the dubious status of compliance officer as an extracurricular activity akin to chaperoning the junior prom. Furthermore, the busy staff employee cannot regard the administration of The Plan as a route to higher management. Accolades are likely to go to the organization's accountant who discovers yet another loophole, or to the rising-star salesperson, but the affirmative action plan officer tends to be a target for management and federal officials. Targets, ultimately, are expendable.

Finding Indian job applicants. Employers were asked to identify their best sources of Indian employees, i.e., where and by what means they obtained most of their Indian workers. Table 1 shows that during interviews employers credited three sources for the majority of their Indian applicants; namely, walk-ins, the State Employment Service, and referrals from employees.

The answers were different, however, when employers were asked to name the specific sources for each of the Indian employees comprising the

Table 1

Sources of Indian Employees (Employers' General Observations)

	Number of Employers Citing Source	*Percentage of Employers Responding*
Walk-in or unsolicited applicant	22	*60*
State Employment Service	22	*60*
Referral by another employee	15	*41*
Newspaper advertisements	5	*14*
Recruiting at high schools and colleges	4	*11*
Unions	1	*3*
Community Action Programs	1	*3*
Other sources	7	*19*
Don't know	3	*8*

Notes: More than one source was given by several firms. Other sources mentioned were minority advisors on campuses, Bureau of Indian Affairs, Human Resource Development Council, recruiting at the reservation, private employment agencies, tribal references, and referrals by minority contacts.

[9]Additional information about requirements and procedures to be followed by businesses is detailed in a publication of the U.S. Equal Employment Opportunity Commission entitled *Affirmative Action and Equal Employment: A Guidebook for Employers.* Volumes I and II may be obtained free of charge by writing to: EEOC—Affirmative Action, P.O. Box 1612, Springfield, Virginia 22151.

employee sample. For example, 60 percent of the employers indicated that walk-in applicants, along with the State Employment Service, are their best sources for Indian employees (table 1). But data for specific employees show that walk-in applicants accounted for 37 percent of those hired, and State Employment Service references declined to 10 percent (table 2). Employers appear to attribute an exaggerated value to both sources.

Several factors may explain some of the differences. First, the sample may not be representative of the remaining Indian employees. Second, for about 20 percent of the sample, the source was unknown. (Source of employees is not indicated on employment records in various firms.) If the "don't know" category of responses is distributed throughout the other groups on a weighted basis determined by share-of-responses, walk-in applicants would increase to about 44 percent. Also, the importance of the State Employment Service may be understated in those cases where it, along with another source, is involved in the selection process and the other source is identified instead of the State Employment Service. Of course, this could apply to all sources. It is also possible that the State Employment Service is not meeting the needs of Indian job seekers.

An alternate view was provided by the Indian employees and terminated employees of the thirty-seven firms who were interviewed about their employment experiences. Approximately 56 percent of the 158-Indian employee sample were questioned; 75 percent were still employed by the thirty-seven firms, while the remaining 25 percent had terminated their employment. All the interviewees were asked how they obtained their most recent jobs. Their responses are presented in table 3.

Table 2

Sources for 158 Indian Employees (Employers' Specific Observations)

	Number of Employees	*Percentage of Employees*
Walk-in or unsolicited applicant	58	*37*
Referral by another employee	19	*12*
State Employment Service	16	*10*
Recruiting at high schools and colleges	10	*6*
Newspaper advertisements	5	*3*
Unions	1	*1*
Community Action Programs	1	*1*
Other sources	17	*11*
Don't know	31	*20*
Total number of employees	158	*101*

Note: Percentages do not equal 100 because of rounding.

Table 3

Method Used To Obtain Job (Employees' Version)

	Number Using Method	*Percentage Using Method*
Walk-in or unsolicited application	49	*56*
Referral by another employee:		
Friend was employed there	13	*15*
Relative worked there	8	*9*
State Employment Service	5	*6*
Employer's request	3	*3*
Other methods	4	*5*
No response	6	*7*
Total employees responding	88	*101*

Note: Percentages do not equal 100 because of rounding.

Walk-in or unsolicited application is the most common method of finding a job reported by Indian employees. Referrals from friends and relatives are important but are used less frequently than walk-in. The State Employment Service is used significantly less than employers thought.[10]

Several employers reported that they were unable to attract Indian persons to apply for work with their firms, did not obtain Indian walk-ins, and did not engage in outside recruiting activities. Several said they are interested in developing sources for employing Indian persons and are willing to take the initiative in seeking out prospective employees rather than in waiting for them to apply.

The issue of employment source and who takes the initiative is fundamental in developing affirmative action plans. The fact that firms are not contacted for employment by minority persons may no longer be considered a valid reason for not employing minorities. From the reports of both employers and employees, as shown in tables 2 and 3, it is apparent that most of the Indian people sought out their jobs, not vice versa.

Jobs assigned to new Indian employees. In 84 percent of the 158 sample cases, employers considered that the jobs the new workers were hired to perform were standard entry-level positions. They regarded the jobs assigned for the remaining situations to be above standard entry level. In no instances did employers indicate that Indian persons were hired for jobs lower than standard entry level. Yet, it was determined that Indian persons were hired as janitors by two firms, and it was apparent that other employees in these firms had not begun in janitorial jobs. It was not otherwise evident in this study that Montana employers discriminated against Indian persons in initial job placement, and non-minority persons were found to be performing the same standard entry-level jobs as Indian employees.[11]

The influence of collective bargaining in firms is evident. In several instances, union contracts require all nonmanagement employees to start at the lowest job classifications. In organized firms, employees starting at the lowest job classifications soon moved to higher jobs. Typically, advancement came within a period of one to three months. The lowest job classification in organized firms, furthermore, tended to pay relatively high wages; examples were found of $4 per hour or more.

Several observations about initial jobs and subsequent promotion opportunities: The

Table 4

Types of Employee Training Provided by Employers (According to Employer)

	Number of Employers	*Percentage of Total Employers*
On-the-job	31	*84*
Vocational-technical school classes	6	*16*
Classroom training	5	*14*
College courses	4	*11*
Correspondence courses	2	*5*
Apprentice schools	2	*5*
Other types of training	11	*30*

Notes: More than one type of training was used by several firms. "Other types of training" include one response each for first aid, safety, company school, job rotation, programmed materials, written materials, orientation courses, books, workshops, Civil Service training courses, and business school.

[10]An additional explanation of the role of the State Employment Service is warranted. An unpublished study by C. Brent Hunter, "American Indian Employment Characteristics" (Billings, February 1974), analyzes the placement during 1972 of 354 Indian persons from the Billings office of the State Employment Service. Hunter determined that 63 percent of placements occurred on nearby reservations. He also determined that Community Action Programs on the reservations employed the most people, and that the jobs were short-term, low-skilled, and low-paying.

[11]For a differing opinion and additional information see Montana Advisory Committee to the U.S. Commission on Civil Rights, *Employment Practices in Montana: The Effects on American Indians and Women* (Helena, August 1974).

majority of the 158 Indian employees—63 percent—were still employed within the thirty-seven firms, and 63 percent of these employees had been promoted. Of the employees not promoted, 60 percent had been employed less than one year. Only 15 percent of the persons employed one year or longer had not been promoted.

Training and job orientation provided. Virtually all employers stated that they provided Indian employees with information about company policies, rules, and procedures, as well as company benefits and services to employees.

A difference of opinion as to employee training existed between the firms and a large number of their employees. All but one employer reported that training was provided for new employees. Training took a variety of forms (see table 4).

On-the-job training was by far the most prevalent training method reported. The bulk of placements was for nonskilled work in which the nature of work allowed employers to develop necessary skills in employees. When asked what types of training, skills, and background were needed by new Indian employees to perform their jobs, employers stated in 72 percent of the cases that none was required.

The sophistication of on-the-job training varies, of course, with the character of work performed and the skill level of new employees. Yet, 43 percent of the employees stated that *no* training was provided by their employers. Apparently some employees did not know they were being trained or did not consider the level of instruction of sufficient importance to be called "training."

Types of employee problems encountered. One might expect that most businesses would meet with one or more forms of employee problems, whether of major or minor consequence. Most Montana firms surveyed did not view themselves as having many employee problems, however. For their responses, see table 5.

The relative absence of problems and idyllic labor conditions apparent in table 5 may be explained, in part, by the following observations: Some employers accept a level of perturbation as normal and, therefore, do not consider a situation as a problem; others are not aware of existing problems; some are unwilling to admit to having problems; or, they actually do not have problems. The writer believes that most employers are able to live with a certain level of conflict without considering the situation to be a problem.

Table 5 indicates that Indian persons have greater absenteeism and alcoholism difficulties than non-Indians. However, their employers report that they have fewer financial problems, grievances, family problems, career development problems, health problems, and accidents than other employees.

Table 5

Percentage of Employers Reporting Specific Employee Problems for Non-Indian and Indian Employees (Employers' Observations)

Problem	Non-Indians (37 responses)	Indians (35 responses)*
Absenteeism	43	54
Finances	32	20
Grievances	27	11
Family problems	27	26
Career development	24	23
Health problems	19	11
Alcoholism	19	29
Accidents	14	9
Other	14	3

*Two firms had no Indian employees during the past two years.

Note: "Other" includes, for non-Indian persons, problems in adapting to technological change, shift work, scheduling, drugs, and retirement; for Indian employees, problems in distances traveled to work and shift work.

In order to develop a perspective of the magnitude or severity of each category to other categories, employers were asked to rank problems by importance. The investigator then applied a weighting process to distribute the appropriate share of each problem to the sum of all problems (see table 6).

Table 6

Problems of Non-Indian and Indian Employees, Ranked by Employers*

Non-Indians		Indians	
Problem	Weighted Percentage	Problem	Weighted Percentage
Absenteeism	29	Absenteeism	42
Finances	12	Alcoholism	15
Career development	10	Career development	11
Grievances	10	Family problems	11
Family problems	10	Finances	7
Alcoholism	8	Grievances	4
Health problems	8	Health problems	4
Accidents	6	Accidents	4
Others	7	Others	2
Total	100	Total	100

*Weighting process applied by investigator to distribute the appropriate share of each problem to the sum of all problems.

Table 5 indicates the type of problem; table 6 provides a ranking by employers of problems within each group of employees which has then been weighted. The weighting process increases the severity of absenteeism and alcoholism for Indian employees while reducing them for non-Indians. Several employers were quick to point out the difficulty of ranking problems because one problem frequently creates or aggravates others.

The reader should remember that, with the exception of absenteeism for Indian employees, over one-half of the employers reported having no employee problems. Elysium revisited. As the tables show, employers considered absenteeism to be by far the most serious problem.

Some employers believe employees' financial and family matters are private and do not inquire about them. In larger organizations and those with geographical operations scattered throughout the state, personnel managers are not acquainted with most of their employees and, therefore, are not familiar with their problems. Managers may receive

information about absenteeism and major grievances, but they know little else about individual employees.

The perceptive reader has already realized that tables 5 and 6 do not, in reality, identify and classify problems. Rather, they are a listing of *symptoms* of problems. Something caused the absence, the grievance, the drinking, and the accident. To reduce or eliminate the symptom, one first must attack the problem.

Helping Indian employees cope with problems. Employers were asked about their firms' counseling activities and their sponsorship and use of community services for Indian persons. Indian employees were asked about conditions making it difficult for them to find and keep jobs, about their ability to obtain help from supervisors, and about the types of assistance available to them away from the job.

Of thirty-seven firms surveyed, 84 percent stated they provided career orientation and development counseling to all employees. Counseling for personal problems was offered by 62 percent of the firms. No employer had full-time counselors although three had part-time, in-house counselors. In six firms, counseling was also available to members of employees' families, although infrequently used.

The nature and sources of counseling varied. In some organizations, supervisors were expected to provide assistance to their employees. In others, employees were encouraged to contact their personnel departments and top managements for aid. A regional firm had a company nurse who also functioned as a counselor, although she visited Montana only semiannually. (The reader may visualize employees storing problems for six months. Ah, Vesuvius.)

Another organization operated a program for treating alcoholics. It required sending them out of state to an area where professionals were located—and the program worked. One firm not only transmitted information about company policies, procedures, and benefits to new employees, but it also reviewed the material with them several weeks later to ensure they understood it. One organization realized that higher absenteeism existed immediately after paydays so it scheduled employees' days off immediately after paydays. Another noticed that some new employees were having financial difficulties, and paid them more frequently. When needed, another provided cash advances for new employees to enable them to buy food and obtain housing. A large business planned to over-hire as insurance against absenteeism. Two firms had ombudsmen. One firm prepared its employees for the first Indian employee's arrival by holding a meeting with the immediate work group.

Employers were asked if they sponsored community services for Indian persons; only 29 percent did, and responses from several of them revealed that they probably only indirectly sponsored such activities. For example, three firms viewed vo-tech as a community service to Indian persons; two supported Bureau of Indian Affairs programs; and two supported local Chambers of

Table 7

Conditions Making It Difficult for Indian Persons To Find and Keep Jobs (According to Employees)

Problem	Number of Employees	*Percentage*
No problems reported	46	*52*
Transportation	16	*18*
Housing	8	*9*
Lack of babysitters or day care centers	8	*9*
Insufficient education and training	7	*8*
Employer prejudice	7	*8*
Shortage of funds while awaiting first check	2	*2*
Difference in physical appearance and dress	2	*2*

Note: Based upon a sample of 88 employees. Some employees cited more than one problem.

Commerce. Many kinds of local organizations were cited once. Overall, most employers did not use, sponsor, or participate in any community services for Indian employees.

A complementary view of the community service question was provided by the sample of eighty-eight Indian employees. Almost half (forty-two) reported that a number of factors made it difficult for them to find and keep their jobs. Table 7 presents the types of problems they reported.

Indian employees were asked if they could go to their supervisors for assistance when they had problems. Seventy-four (84 percent) stated they could, while 10 percent said they could not. The remainder did not know, or answered that they never had problems. The high positive response speaks well for the working relationships and channels of communication within most of the firms.

Table 8

Sources of Help Inside the Firm Cited by Indian Employees

	Number Responding	*Percentage Responding*
No problem reported	46	*52*
No source of help other than supervisors	23	*26*
Higher management	17	*19*
Other employees within the organization	17	*19*
Personnel department	5	*6*
Union representatives	3	*3*
Company counselors	2	*2*
Equal employment opportunity counselor	1	*1*

Notes: Based upon a sample of 88 employees. Some respondents cited more than one problem. Responses included the following opinions: Employers do not understand employees' problems; employers do not have time to listen to problems; employers are not interested; and employees do not know where to go (other than to their immediate supervisors) for assistance.

Indian employees were also asked to identify persons other than their supervisors within the organization from whom they could receive assistance. Table 8 shows that higher management and other employees in the organization are most frequently available to assist Indian employees.

An important part of the Indian labor force, 26 percent, is either uninformed about what actions to take beyond the supervisory level or does not believe additional followup of problems would prove productive. Noteworthy is the relatively infrequent use of personnel departments, company counselors, and the equal employment opportunity officer. Even though three-fourths of employees are having no difficulties in locating sources of help beyond the supervisory level or are satisfied with existing conditions, the remaining fourth identified in this survey would have a propensity to quit or harbor grievances. Therefore, this minority warrants additional attention by management.

Indian employees were asked to name sources of assistance away from their jobs. Table 9 shows that 46 percent of Indian employees regarded their families as being available for assistance; 16 percent felt they could talk to friends; and another 11 percent mentioned ministers.

Terminations. Three out of four termination decisions were made by employees rather than by their employers. Family problems were most frequently cited as the reason for leaving, but often no reason was given by the employee. In many instances, it is apparent that employers did not know the underlying motives which caused Indian employees to abandon their jobs. Few firms conduct exit interviews.

The unanimous reason for employees' dismissal was excessive absenteeism. There did not appear to be a systematic or extensive effort to determine causes of absences, although several firms did attempt to verify the causes.

How Employers and Employees View One Another

The following section considers labor turnover and employers' perception of strengths and weaknesses of their Indian employees. It also

reports on what the employees like best and least about their jobs.

Employers were asked, "Is labor turnover of Indian employees a problem in your business?" Twelve (32 percent) said yes; twenty-one (57 percent) said no; four (11 percent) didn't know.

They were also asked to consider the relationship of Indian to non-Indian employees. Almost 57 percent of the employers believed the turnover of Indian employees was no more of a problem than the turnover of non-Indian persons. Few firms computed labor turnover or the turnover rate for specific jobs. Slightly over 70 percent of the firms did not have such information available. The costs of turnover are, therefore, unknown in these firms. An analysis of turnover could be a useful management tool, and its use in more firms would appear warranted.

Table 9

Sources of Help Outside of the Firm (According to Employees)

	Number Using Source	*Percentage Using Source*
No source of help outside the firm	19	*22*
Family members	40	*46*
Friends	14	*16*
Ministers	10	*11*
Welfare offices	3	*3*
North American Indian Alliance	3	*3*
Miscellaneous sources	9	*10*
No response	3	*3*

Notes: Based upon a sample of 88 employees. Some respondents cited more than one source. Two responses or less were received for the following miscellaneous sources: Out-of-state Indian centers, Missoula Indian Alcohol and Drug Service, bank, lawyer, tribal office, and college counselors.

Table 10

Job Characteristics Liked Best by Indian Employees

	Number of Employees	*Percentage of Employees*
The work itself	38	*43*
Pay satisfactory or good	20	*23*
Steady employment (job security)	12	*14*
Good fringe benefits	10	*11*
Compatible co-workers and supervisors	7	*8*
Outdoor work (answers included in "Like the work itself" category)	4	*5*
No response	22	*25*

Note: Based upon a sample of 88 employees. Some respondents cited more than one job characteristic.

Employers were asked if they perceived any important differences between non-Indian and Indian persons which would affect hiring and retention of Indian employees. Twenty (54 percent) replied, yes. The remainder saw no significant differences.

Employers provided evaluations of the strengths and weaknesses of their Indian employees. The range of virtues may make the modest blush. The positive employee traits most frequently mentioned were: dependability, quantity and quality of work, ability to work with others effectively, need for minimum supervision, and loyalty. Absenteeism and the lack of aggressiveness were the major weaknesses.

To complete the picture, employees were questioned about their job satisfaction. They were asked if they wanted to continue working for their current employers. Eighty-four percent indicated that they did.

Indian employees were also asked what they liked best about their jobs. Table 10 shows the nature of the work itself to be most important, with wages and job security in second and third positions.

Interestingly, national studies of job satisfaction rank job security, the nature of the job, and the opportunity for advancement as being the most important job factors. Although our study did not ask employees to *rank* but merely to indicate each important factor, it deviates from the national norm in several important ways. First, Indian employees placed significantly greater value on the nature of the jobs as creating satisfaction. Second, they did not consider the opportunity for advancement as important. Finally, they placed job security much lower than its position in national studies.[12]

Features which employees did not like about their jobs are listed in table 11.

Table 11
Job Characteristics Disliked by Indian Employees

	Number of Employees	*Percentage of Employees*
Nothing wrong with current job	28	*32*
Health hazards	8	*9*
The working hours, including shift work	7	*8*
The type of work itself	4	*5*
Low wages	4	*5*
Bureaucracy and red tape	3	*3*
Too much traveling on the job	2	*2*
Too far to travel to and from work	2	*2*
The 8-to-5, Monday-through Friday routine	2	*2*
Lack of transportation to and from work	2	*2*
Lack of job security	2	*2*
Miscellaneous characteristics cited	6	*7*
No response	22	*25*

Notes: Based upon a sample of 88 employees. Some respondents cited more than one job characteristic. One response was received for each of the following miscellaneous characteristics: Insufficient medical and retirement benefits, no union, winter driving, poor supervision, and no paid vacation.

Summary of Findings

The preceding description of Indian employment leaves the following impressions:

1. There are additional employment opportunities for Indian people within the medium- and large-size businesses in Montana. Firms say they are interested in employing more Indian people.

2. Employee turnover is high. Almost one-half of Indian employees have been with their firms for one year or less. Two-thirds have been working for their employers two years or less. Turnover appears to be a major problem for firms.

3. The primary source of Indian employees consists of walk-in or unsolicited applicants; the motivation resides with the applicant and not the employer.

4. Indian persons have somewhat higher absenteeism rates than other employees but the difference is not of a quantum magnitude.

5. Employers have fewer grievance problems with Indian employees than with non-Indians. Channels of communication between Indian employees and their supervisors, overall, are good. The majority of Indian employees want to continue working for their present employers.

6. Some organizations are in the early stages of implementing affirmative action plans. They, along with others, need help, especially from top management in the form of administrative support of compliance officers. Information about how to develop and promulgate affirmative action plans would be useful.

7. Finally, management shares in the failure of Indian employees who quit. If management is capable of the change that the times require and demonstrates leadership, greater employment of

[12]Job attitudes are based upon 16 studies involving over 11,000 employees. Reprinted in Wendell French, *The Personnel Management Process: Human Resources Administration*, Third Edition (Boston: Houghton Mifflin Company, 1974), pp. 98-100, from Frederick Hertzberg *et al., Job Attitudes: Review of Research and Opinion* (Pittsburgh: Psychological Service of Pittsburgh, 1957), p. 46.

Indian persons should follow. Achieving optimum Indian employment is a challenge to businesses, but the rewards over the long run should be measured in human and monetary terms.

Recommendations for Improving Employment and Retention Practices

A number of suggestions are presented below for improving the employment and retention rates of Indian persons. Many are not expensive in dollars—at least directly. But they do take time for sufficient analysis and development of strategies. Suggestions are made with the knowledge that employers know their businesses better than this writer. Businesses are, by intent, profit-seeking organizations, so several of the following options may not be practical. Others may warrant testing and implementation.

To attract more Indian applicants:

- Advertise jobs more widely.
- Develop a more comprehensive recruiting program. Recruit at reservations, high schools, and so forth. Encourage existing Indian employees to recommend people they think are good employment material.
- Maintain records of sources of employees.
- If needed, pay new employees sooner than regularly scheduled pay periods. Visual inspection may indicate that needs exist. If in doubt, ask if the person needs financial assistance.
- Consider developing transportation for Indian persons living on reservations and commuting to work in towns. Several firms may jointly sponsor this activity.
- Promote the development of day care centers for the children of working parents.
- Promote the improvement of Indian placement activities of the State Employment Service. Encourage the Service to develop more counseling for Indian persons; particularly, they should supply information and training on how to apply for jobs and how Indian applicants should conduct themselves during job interviews to increase their employment opportunities.

To retain Indian workers:

- Provide a "patron" for new Indian employees. When problems arise, the new employee can contact his patron for assistance. This sponsor should seek out the new employee every few days during the first several weeks of employment. The patron may be the supervisor or some other designated person.
- Inform new employees of the chain of command or persons they can contact when they have problems not solved by their immediate supervisors or managers. Even though they are provided with such information when hired, they should be reminded periodically. Furthermore, management's attitude of interest in and willingness to listen to employees' problems should be communicated. Credibility is important. Both knowledgeability about solving problems and truthfulness in relationships are major ingredients of credibility.
- Determine what community services are available for Indian persons. The firm may wish to sponsor and participate in those programs beneficial to its Indian employees.
- Identify and develop channels of communication with "key" people in communities—those having the respect of Indian persons and employers alike.

To help Indian employees cope:

- Remember that training may be considered more significant to Indian persons than to non-Indians. There may be a status implication. The offer of meaningful training may be used to recruit new Indian employees. The lack of training or of perceived unsophisticated training may lead to job dissatisfaction and to the worker's termination.
- Place new Indian employees with supervisors or managers who are culturally sensitive to their problems. The firm may need to train supervisors in Indian culture. Various forms of training can be applied but role-playing should be considered as one of them.
- Provide administrative training and experience to more Indian employees. Indian managers would bring an added dimension of sensitivity to the organization's administration.
- Hire Indian counselors. Large firms may be able to afford them. Other firms may jointly hire counselors and use them on a share-of-service basis.
- Try to develop more self-confidence in Indian employees, particularly those raised on

reservations. Reinforce success by commending employees for jobs well performed.

• Attempt to determine causes of absences. If excessive absences are the major reason for terminating Indian employees, reducing terminations would appear to depend on identifying causes of absences and eliminating them. Followup should be started after the first absence. A person missing one day's work may be hesitant about reporting on the next day, and downright adamant about going back the third day.

• Inquire about the employee's problems. Hold supervisors and managers responsible for helping solve their employees' problems. The Japanese practice this art with finesse. Employees who have problems away from the job are likely to bring them to work, with manifestations of lower productivity, more grievances, and other problems.

When termination occurs:

• Conduct exit interviews of Indian employees. While large firms are financially able to institute their own programs, smaller companies may wish to engage in joint ventures. Termination interviews may be needed for several years and probably should be made by some type of independent organization.

On general principles:

• Support the affirmative action officer. In the initial period of implementing the plan, the affirmative action officer may be required to report directly to the president or general manager.

• Hire Indian persons to work in the firm's personnel and placement office.

• Where only one Indian person is employed by the firm, special care should be exercised that this employee does not view himself as a "token" Indian and, subsequently, resent the employer's actions.

• Perhaps, in participation with government, encourage businesses to locate near reservations. Firms with several branches or establishments may find their reservation operations will provide Indian employees for their operations elsewhere. This approach parallels in part the half-way house concept of a transition between cultures.

• Support programs for encouraging more Indian-owned and -operated businesses, either financially or through training employees. Such actions may stem from businesses or through encouragement of government programs. Administrative training would be particularly valuable. Probably, many Indian-operated businesses fail because of poor management. Creating a cadre of trained Indian managers should produce benefits to non-Indian employers in the long run.

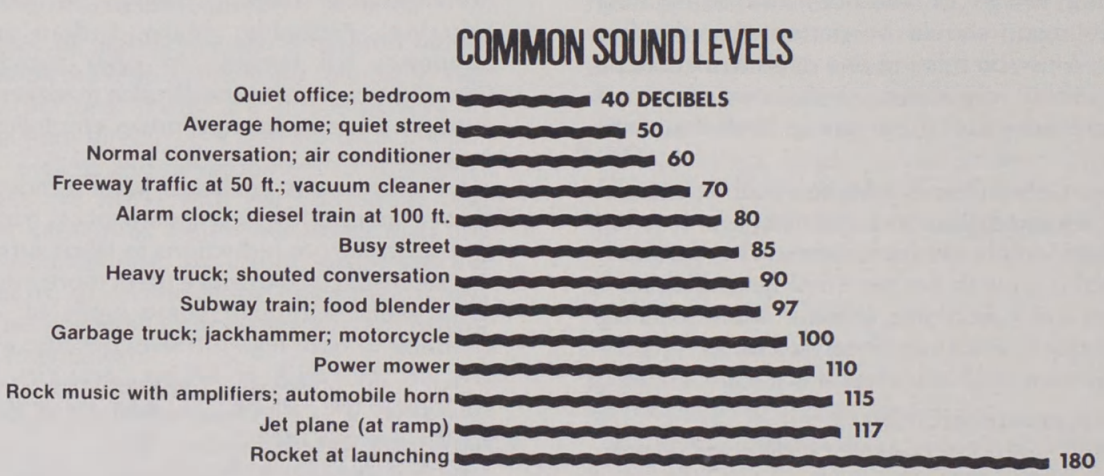
• Perform a cost analysis of labor turnover. More money spent in the selection process may lead to cost savings from reductions in labor turnover.

• Redesign jobs to make them more meaningful to workers. Although some types of jobs will continue to have high turnover because wages are low or the work is boring, activities such as enlarging the scope of jobs or rotation of employees can reduce turnover.

• Over-hire for some jobs when absenteeism is high. It may be less expensive than to lose production because of excessive absenteeism. A study of the costs of each alternative would appear warranted by the larger firms.

• Hold workshops with other employers to learn about Indian employment practices. The content of workshops could include the topic areas covered in this article, and, particularly, the recommendation section. Useful materials should be created and made available to participants. The agenda should be specific and deal with problems and actions to solve them. Employers have objected to the recriminative atmosphere present in some earlier meetings on Indian employment. Organizations such as the Montana Chamber of Commerce can play a constructive role in developing materials and sponsoring workshops. They could also coordinate activities and assist in the interchange of information among employers and other interested agencies. Similarly, the various Indian organizations and the state universities should be able to contribute to the process of improving Indian employment in Montana.

THE NEW OSHA NOISE STANDARD



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Most businesses will be covered by the proposed standard. "Translation" of it follows

The Occupational Safety and Health Administration (OSHA) has recently released for public comment a proposed new noise standard which supersedes the original one established in 1971. The intention of the new standard is to spell out the responsibility of employees and employers as it pertains to occupational noise exposure. There is hope in some quarters that it will do so with somewhat more clarity than the previous standard did. It remains, however, a rather bureaucratically written regulation, and it is the purpose of this article to attempt a rough translation of what the new standard means for the employer, both in terms of what it says and what it does not say.

The proposed noise standard promises to make a significant reduction in occupationally related hearing loss. This is welcome and long overdue news to employees and employers alike, since hearing loss is costly to the employee who suffers the social handicap and to the employer who sees its effects in terms of reduced efficiency and an increased propensity for accidents.

On the other hand, the proposal also promises to be an administrative pain in the neck in terms of compliance. Needed engineering controls will usually (though not always) be more costly than leaving things alone; monitoring and measuring commitments call for equipment and concepts that are "Greek" to most managers; and relationships with OSHA inspectors, already strained in many cases, will be strained even further as a whole new "can of worms" is opened in the enforcement process.

Some companies, in their initial reading of the new OSHA noise standard, will feel compelled to establish elaborate programs for the control of noise in their plants, as they did when the first standard was released in 1971. Many of these companies later discovered that they had added unnecessary things, or the wrong things, or things that could not be justified on a cost accounting basis, or things that could have been gotten at a fraction of the cost from outside sources.

A more cautious, enlightened approach seems in order this time around. The details of the OSHA document are intricate, tedious, and for some, not trained in the ways of the decibel, even incomprehensible. The temptation is strong to "hire the whole thing out," and, in some cases, that may be the most expedient thing to do. There are, of course, many excellent consulting services and hearing testing facilities, the use of which may represent a far more feasible response to the OSHA noise standard than attempting an entire program with internal resources.

But the publishing of the standard has created a rash of "experts" who, with a homemade sound-level meter and the ability to count to ten, "consult" on noise reduction, and others who do audiograms in "soundproof" booths consisting, in large part, of muslin curtains that look as if they might do double-duty on election day as voting booths. So far, there are relatively few certifying bodies or training requirements for those who would offer these services, so the buyer must still beware and should be prepared to ask searching questions about whether testing environments and equipment meet appropriate American National Standard Institute (ANSI) standards, and about the qualifications of personnel performing these services.

There would seem to be considerable potential opportunity for industries with common problems to share the costs and benefits of solutions through their trade associations; industries should urge their associations to provide this assistance whenever possible.

Businesses Covered by the OSHA Standard

The provisions of all the OSHA standards, of which the noise standard is one, apply to every employer engaged in a business affecting commerce and having at least one employee other than himself. The law applies in all fifty states and in most of the other real estate owned or operated by the United States. Federal, state, and local government employees are excluded from coverage, but may be covered by other, equally effective requirements. Also excluded are those protected under other federal occupational safety and health laws such as the Coal Mine Safety and Health Act, the Atomic Energy Act, etc.

A Safe Workplace: The Goal

The OSHA noise standard differs from much of the previous body of law as it relates to noise exposure. Early noise law dealt solely with workmen's compensation for lost bodily function, and, since the early part of the century, for the traumatic loss of hearing. Recent developments in compensation law have treated the gradual loss of hearing due to noise as an occupational disease, rather than as an injury, and as such it is now compensable in many states.

The OSHA standard, however, is not concerned with compensation for the injury or disease, but with the prevention in the first place. The standard is accordingly directed toward ensuring a safe workplace for the employee. Historically, it derived from the 1969 amendments to the Walsh-Healey Act which added protection against excessive noise to a long list of safety requirements applicable to any company doing business with the federal government in excess of $10,000 per year. The Walsh-Healey Act exempted many of the small, localized companies from coverage, and studies have shown many of these to be among the most dangerous places a person can work. The OSHA legislation thus incorporates the Walsh-Healey standards into the broader coverage noted above.

Features of the Proposed OSHA Standard

Following the publication of the original noise standard, the U.S. Department of Labor in 1972 appointed a Standards Advisory Committee to obtain

and evaluate additional recommendations from all interested sources. From the input of this committee and from public hearings the present proposal has evolved. Several of its more important features are described below.

Acceptable Noise Level

Chief among the OSHA standard's more controversial provisions is the retention of the 90-dBA[1] level as an 8-hour time-weighted average (see table 1). The National Institute for Occupational Safety and Health, the Environmental Protection Agency, and several health-oriented agencies had pressed hard for a reduction to 85 dBA, which amounts to cutting the acceptable noise exposure by half. In the absence of solid data on the cost and technological feasibility of reaching that level, OSHA reluctantly agreed to retain the 90-dBA level. Employers should be aware that the agency has begun a massive effort to obtain the risk and feasibility data to substantiate the lower level in the future.

Table 1

Permissible Exposure Limits; Steady State Noise-Single Level

Sound Level (dBA)	Time Permitted (Hours-Minutes)	Sound Level (dBA)	Time Permitted (Hours-Minutes)
85	16-0	101	1-44
86	13-56	102	1-31
87	12-8	103	1-19
88	10-34	104	1-9
89	9-11	105	1-0
90	8-0	106	0-52
91	6-58	107	0-46
92	6-4	108	0-40
93	5-17	109	0-34
94	4-36	110	0-30
95	4-0	111	0-26
96	3-29	112	0-23
97	3-2	113	0-20
98	2-50	114	0-17
99	2-15	115	0-15
100	2-0		

Source: Adapted from table G-16 in the current OSHA noise standard.

[1]dBA (decibels A-weighted) is a unit of measurement of sound level corrected to the A-weighted scale, as defined in ANSI standard S1.4-1971 using a reference level of 20 micronewtons per square meter.

A number of studies, now underway, will determine what levels of noise exposure are detrimental to employees over a period of several years. One such effort is a $300,000 study being financed by thirty-one industries, many of whose plants will be included in the investigation. The most difficult problem with this study is finding workers who are consistently exposed to steady noise levels in the 80- to 90-dBA range throughout the workday and over extended periods. Although the study is presently underway with 500 to 1,000 employees in forty plants who will be monitored for a three-year period, other employers who have employees in this category are encouraged to share their audiometric monitoring results with this author, or with the OSHA, for purposes of corroborating or refuting the findings of such studies.

New standards that will reduce the acceptable noise levels may be expected to come from such studies, some of which may be using data from the hearing conservation programs in our own local industries. Hoerner Waldorf Company has one such program, and the University of Montana Speech and Hearing Clinic has assisted in the establishment of a number of others. Indeed, our basic industries of forest products, mining, and agriculture represent sufficiently unique noise problems that I would hope their data would be included in statistics—which, at present, derive largely from the fabricating industries more commonly found in the East. It thus becomes very important that hearing conservation programs be as accurate as possible to ensure a fair and reasonable standard, whatever noise level it may imply.

In any case, effective engineering control of noise is less expensive and easier to achieve when it is built into the system from the start than when it is added to existing facilities. Thus, the far-sighted employer may do well to assume that an 85-dBA limit is probably in the cards, if not this year, then some other year, and set his target noise levels accordingly in all new or remodeled facilities.

As a rule of thumb, if an area is too noisy for face-to-face conversation, it is likely to have hazardous noise levels. If the employer is in doubt about whether the noise level is hazardous, he may seek help from consulting services such as those that

may be available through his insurance carrier or within the units of the Montana University System. He should use caution in establishing the competence of these services, of course.

Impact-Impulse Noise

Another feature of the proposed standard which is of interest to many employers in this region is that concerning impact or impulse noise such as hammering, punching, dropping, explosions of compressed air, etc. Although the old standard recommendation of a 140-dBA limit would now become mandatory, it would vary with the number of impulses, as well as with their intensity. Starting with the limit of 140 decibels (which is not quite the same as dBA, incidentally) for 100 impulses, per day, the number of impulses can be increased ten-fold for each 10-decibel reduction in their intensity. Thus, if the impulses averaged 130 dBA, 1,000 of them would be allowed per day, and, at 120 dBA, 10,000 are acceptable, etc.

It should be noted that impulse noise presents special difficulties in measurement that require more equipment capability than is usually found in the small hand-held survey meters used by many safety departments (as well as by some consultants and inspectors). Since impulse levels are usually higher than the small meters indicate, it is recommended that if impulse noise becomes an issue in compliance, the advice of specialists in acoustics should be sought so that any modifications do not turn out to be inadequate to the task when the OSHA inspector arrives.

Emphasis on Noise Control

The new OSHA proposal continues the previous requirement that engineering and administrative controls must remain the first line of defense in reducing noise exposure. Even where "the best is none too good," these controls must still be used, to the extent feasible, before individual hearing protection is acceptable as a substitute.

Much discussion has centered on the issue of what is feasible, and perhaps one of the healthiest aspects of this hotly debated legislation has been the many trade associations that have taken the initiative to determine what the limits of feasibility are for noisy processes in their various industries. Thus, while it may be difficult for a single plant to argue that a modification is unfeasible when it is in wide use in similar plants elsewhere in the industry, it will also be much easier to argue that a modification is not feasible if the entire industry, after careful investigation, has determined it not to be. The important benefits of shared costs and more objective findings should be encouraged wherever possible, and employers should urge their respective trade associations to be active in this area.

Hearing Conservation Programs for High Risk Facilities

The proposed regulation would require the institution of a hearing conservation program that includes audiometric (hearing) testing for any business with employees who have 8-hour noise exposure of 85 dBA or over. (Note that although measures to control the noise are not required until the 8-hour exposure exceeds 90 dBA, the monitoring would now begin at the lower level of 85 dBA.) OSHA's position is that the audiometric testing will help in identifying those additional employees who are at risk who might not have been, if the 85-dBA level had been adopted. To the extent that position is correct, the audiometric testing program may represent the best available compromise between what is technically and economically feasible and what is good for people's ears. Accordingly it deserves the most careful consideration to ensure its validity if the results are to be useful in setting future standards or if they are to survive court tests. To achieve this degree of validity, employers must ensure the adequacy of the audiometric environment as well as the testing equipment and technique. For these reasons, the new proposal lists mandatory requirements for audiometric test rooms, the calibration of equipment, and the training of staff.

In addition, the standard requires that audiometric tests shall be preceded by at least fourteen hours during which there is no exposure to workplace noise in excess of 80 dBA. Further, these tests must be performed on each employee at least annually, and more frequently if changes in hearing acuity are observed.

This regulation may limit the feasibility of on-site hearing tests since they could only be performed before the employee goes to work, and thus the costs of overtime pay and use-charges on mobile-van hearing-testing services may make them prohibitively expensive. A more workable alternative may be to have the employees tested at their convenience within a certain period surrounding the anniversary of their employment. This can be done at facilities such as those at the Easter Seal Centers around the state or at several units of the Montana University System.

Monitoring

The current standard requires noise exposures to be controlled within specified limits, but it does not explicitly require monitoring of the sound level of the employee's environment, nor the measurement of the resulting exposure for the individual employee. The new proposal now requires monitoring and measuring at least annually by all employers, even for those without hazardous noise levels, and within thirty days of any change or modification of equipment or process or other workplace modification affecting the noise level. It also prescribes the minimum acceptable accuracy for monitoring instruments.

Again, the employer who suspects he has hazardous noise levels can either hire his own consultant, not only to measure it but to recommend possible corrective action, or he can wait until an OSHA inspector determines it for him—usually with a fine involved.

Required Records

The proposal requires of all employers the maintenance of records of the results of the required measuring, monitoring, hearing testing, and instrument calibration for a period of five years, except for the hearing tests, which are to be kept for the duration of employment plus five years. In addition, the proposal implements requirements concerning employee access to monitoring records and employee right to observe monitoring. The proposal also requires that prompt written notification be given to employees who are exposed to excessive noise, accompanied by a statement of the corrective action being taken.

Summary

Every segment of the public is coming to recognize the enormous social cost of noise, and that that cost is always paid by someone. Much legislation is being addressed to the general problem of noise, of which occupational noise is only one source. The Noise Control Act of 1972 and various workman's compensation acts, as well as a variety of state and local ordinances, may have significant effect on the distribution of the costs of noise to the producers and users of the noise sources. All of these regulations and not just OSHA's, in turn, may have important implications for the industrial community. Good managers will use every decision-making opportunity—the routine maintenance and modification of old equipment, the acquisition of new equipment, and all the other engineering and administrative controls—to press the quest for a little more quiet.

COURSE OFFERED... "SEMINAR FOR WOMEN ON MANAGERIAL EFFECTIVENESS"

A three-day workshop entitled "Seminar for Women on Managerial Effectiveness" will be offered this summer at four locations in Montana. The Seminar provides the opportunity for professionally oriented women to evaluate their personal and professional needs while developing a management perspective and setting productive career goals. Among the several aspects of management to be discussed are: individual management models, management theory, supervisory skills, career goals, and selected approaches for handling situations unique to women in management.

Dr. Maureen Fleming Ullrich, Assistant Professor in the Department of Management at the University of Montana, will instruct the course. Dr. Ullrich's primary classroom work has focused on organizational behavior and human relations and personnel psychology on both undergraduate and graduate levels. Her concern for equal employment and career opportunities for women has been the foundation of several seminars and workshops conducted in Montana. "Women in Society", "Career Opportunities for Women", and "Equal Employment Opportunity in Region I of the U.S. Forest Service" are only a few of these seminars.

The Seminar was developed initially by the Training Systems Division of Westinghouse Learning Corporation in conjunction with the Institute for the Development of Human Resources of the American Institutes for Research. Any person interested in increasing her knowledge of the dynamics of supervisory and managerial skills is invited to participate in the seminar. Seminar locations in Missoula, Billings, Great Falls, and Fairmont Hot Springs were selected to maximize the opportunity for women to attend. In response to "Affirmative Action" plans as required by governmental regulations, employers and supervisors are encouraged to support women and minorities who wish to enroll in the program.

For additional information regarding the seminars please contact the Center for Continuing Education and Summer Programs at the University of Montana in Missoula.

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